WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE

and

OREGON STATE UNIVERSITY

and

STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above in cooperation with other Federal, State and private organizations.

AS OF
MAY 1, 1963

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 4170, Portland 8, Oregon.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
WESTERN UNITED STATES	MONTHLY (FEB.-MAY)	PORTLAND, OREGON	ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MAR.-MAY)	PALMER, ALASKA	ALASKA S.C.D.
ARIZONA	SEMI-MONTHLY (JAN.15 - APR.1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEB.-MAY)	FORT COLLINS, COLORADO	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO	MONTHLY (JAN.-JUNE)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
MONTANA	MONTHLY (JAN.-JUNE)	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
NEVADA	MONTHLY (JAN.-MAY)	RENO, NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JAN.-JUNE)	PORTLAND, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	MONTHLY (JAN.-JUNE)	SALT LAKE CITY, UTAH	UTAH STATE ENGINEER
WASHINGTON	MONTHLY (FEB.-JUNE)	SPOKANE, WASHINGTON	WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEB.-JUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
BRITISH COLUMBIA	MONTHLY (FEB.-JUNE)	WATER RIGHTS BR., DEPT. OF LANDS, FORESTS AND NATURAL RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA	MONTHLY (FEB.-MAY)	CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF.

USDA - PORTLAND, OREG. - 962

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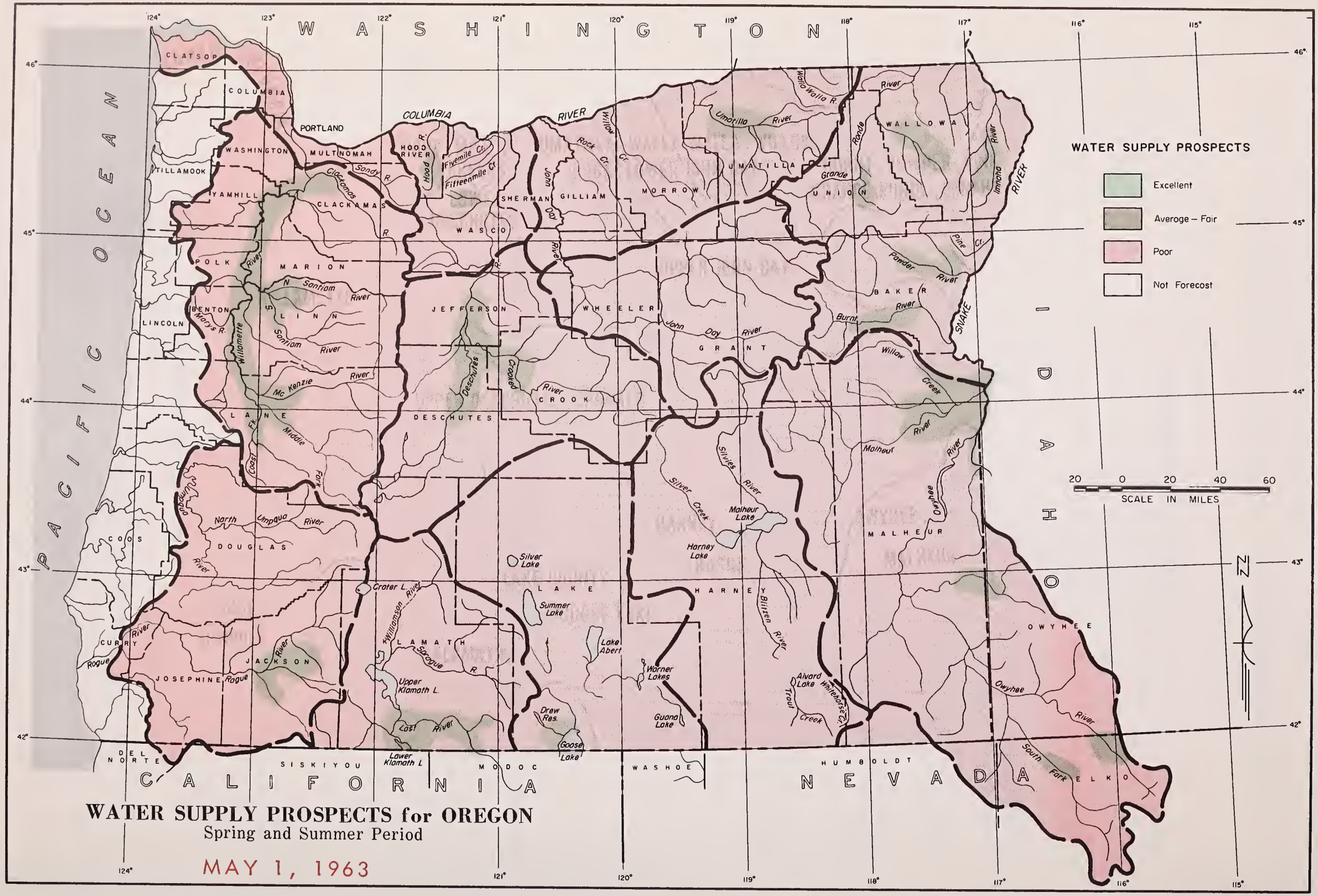


WATER SUPPLY PROSPECTS for OREGON

Spring and Summer Period

MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

7-O-19102-1-L

WATER SUPPLY OUTLOOK for OREGON

MAY 1, 1963

Oregon's gloomy 1963 water supply outlook was improved by above normal precipitation over most of the state. Reservoirs received much-needed increases in storage and the need for early use of stored water was greatly delayed. Streamflow forecasts for the remainder of the season have improved slightly although still well below average. Late season water supplies from natural streamflow are still expected to be "poor" unless above normal precipitation continues throughout the irrigation season.

SNOW COVER

Water content of the snowpack increased generously at higher elevations during April although still only 51 percent of the May 1 average for the 1943-57 period. Below normal temperatures and above normal precipitation over most of the state provided a combination which delayed the usual snowmelt and allowed unusual increases to the snowpack at higher elevations.

SOIL MOISTURE

Soil moisture continued to improve and most watershed soils are well primed to produce good runoff from future storms.

RESERVOIR STORAGE

Stored water in 22 major irrigation reservoirs is now 109 percent of last year on May 1 and 95 percent of the May 1 average for the 1943-57 period.

Most reservoirs received better than expected inflow during April bringing them up to near average or above for this time of year.

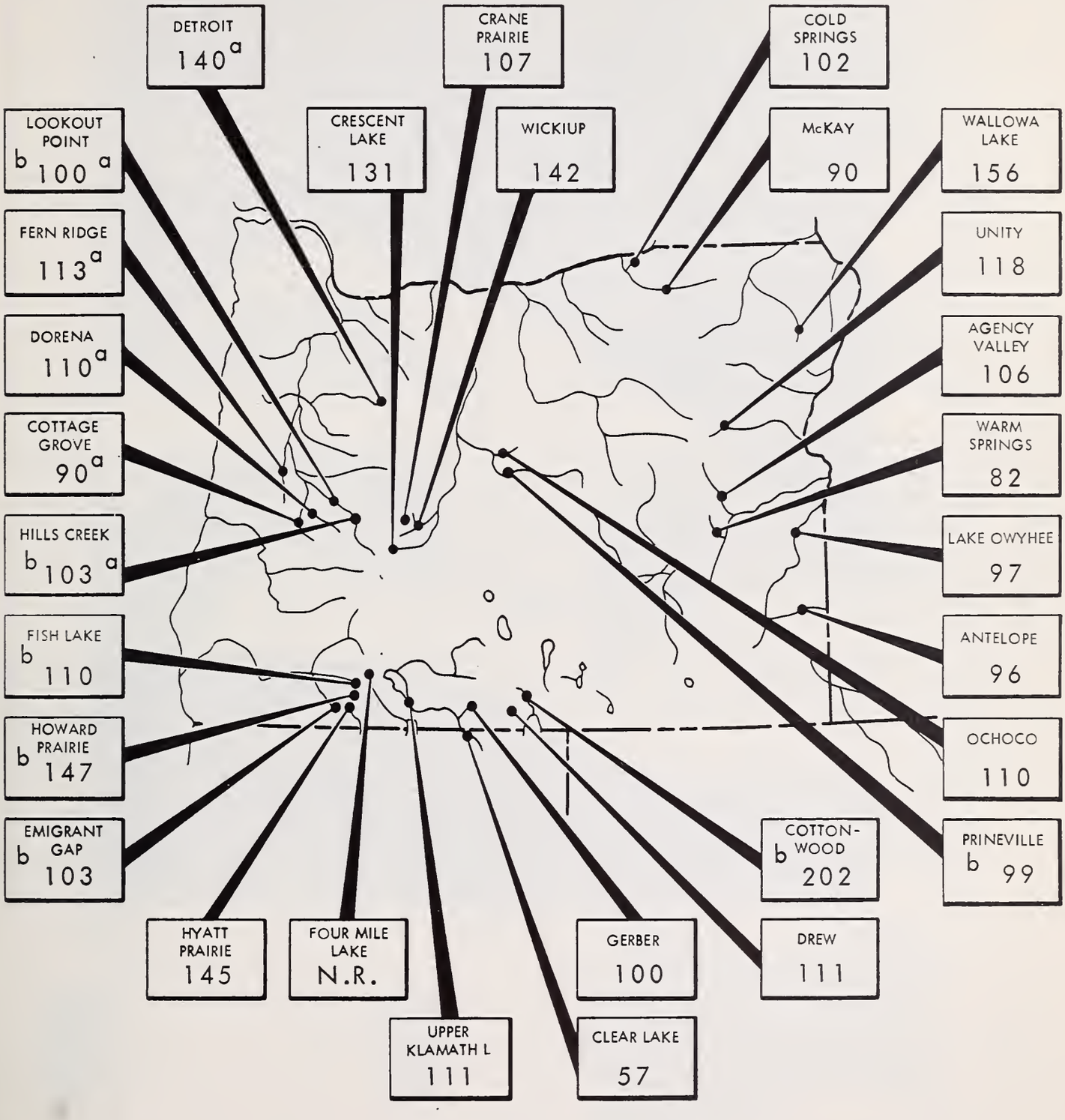
STREAMFLOW

Streamflow forecasts have been increased slightly as a result of cooler and wetter than average April weather. Forecasts now vary from 19 percent of average on the Owyhee for the May-September period to 88 percent on the Wallowa for the April-September period.

Many streams with low elevation watersheds did not receive any significant increase to the snowpack and are still expected to produce poor late season water supplies unless above normal precipitation continues throughout the irrigation season.

STORAGE STATUS of OREGON RESERVOIRS as percent of 1943-57, 15 year average

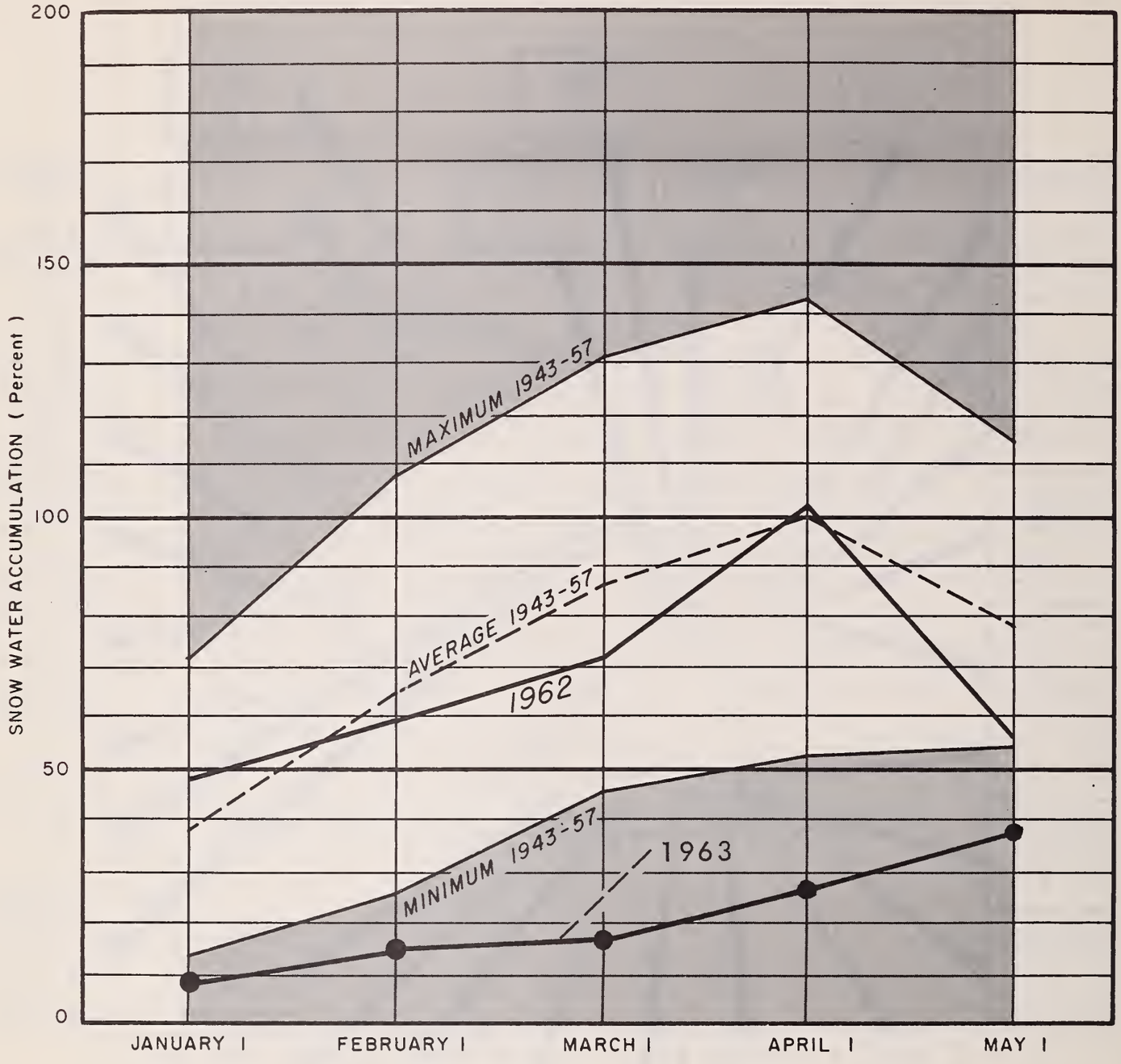
MAY 1, 1963



(a) Multiple purpose reservoir - space reserved primarily for flood runoff.
(b) Short record - compared with last year on this date.
N.R. - No report.

SNOW WATER ACCUMULATION in OREGON

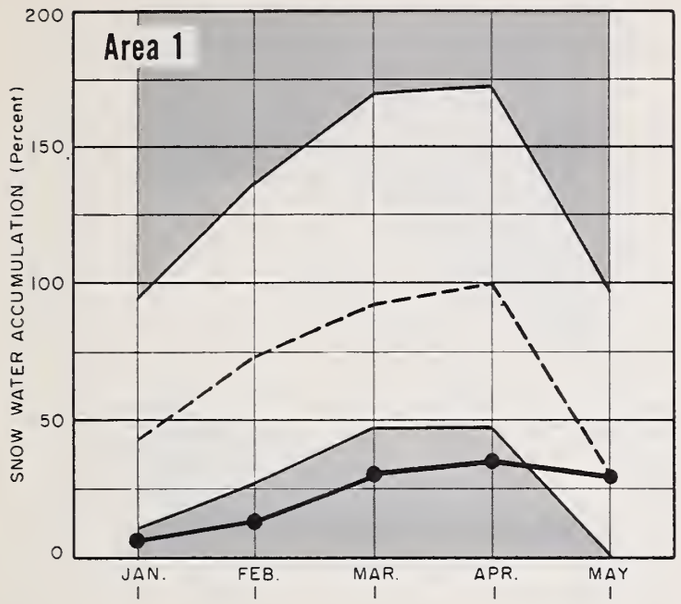
MAY 1, 1963

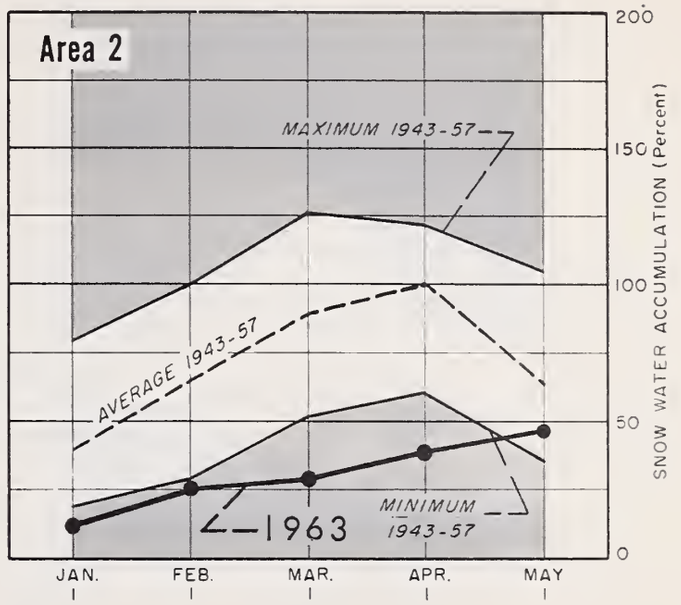


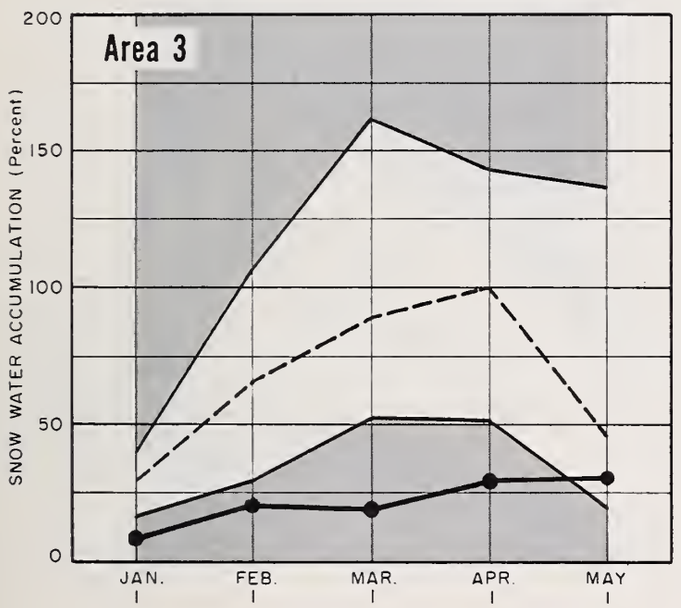
SNOW WATER ACCUMULATION in OREGON

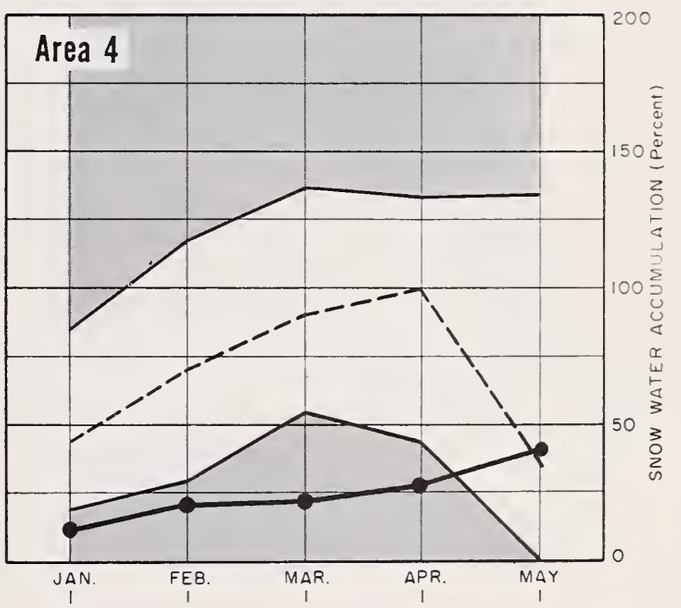
(Percent of average maximum accumulation)

MAY 1, 1963



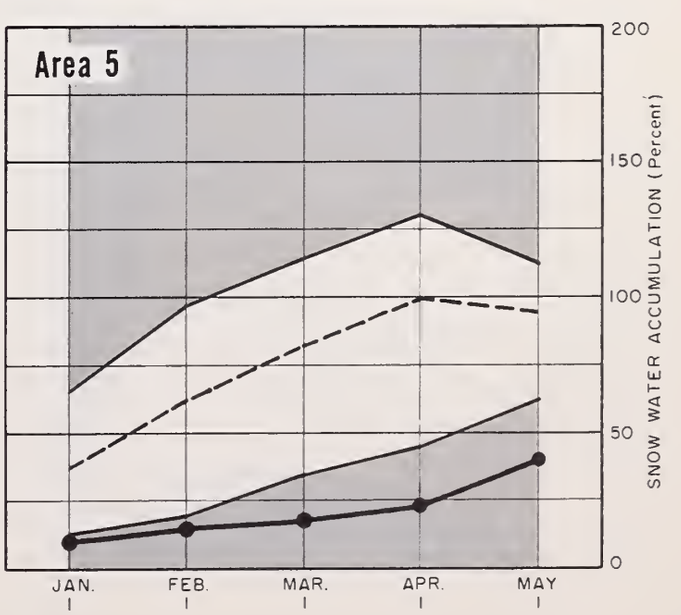






WATERSHED AREA LOCATIONS

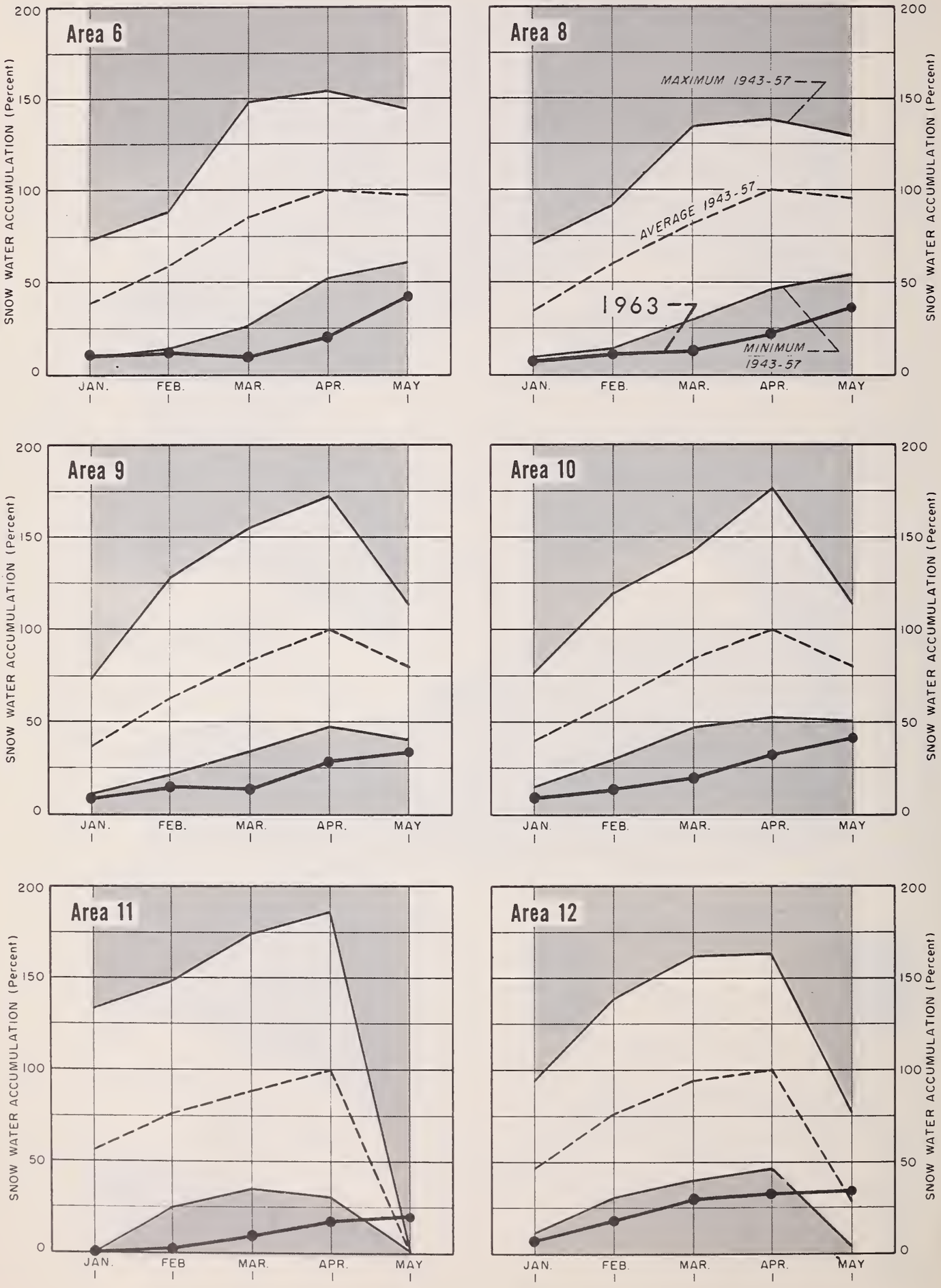
AREA 1 . OWYHEE, MALHEUR WATERSHEDS
AREA 2 . BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
AREA 3 . UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
AREA 4 . UPPER JOHN DAY WATERSHEDS
AREA 5 . UPPER DESCHUTES, CROOKED, WATERSHEDS
AREA 6 . HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
AREA 7 . LOWER COLUMBIA WATERSHEDS
AREA 8 . WILLAMETTE WATERSHEDS
AREA 9 . ROGUE, UMPQUA WATERSHEDS
AREA 10 . KLAMATH WATERSHEDS
AREA 11 . LAKE COUNTY, GOOSE LAKE WATERSHEDS
AREA 12 . HARNEY BASIN WATERSHEDS



SNOW WATER ACCUMULATION in OREGON

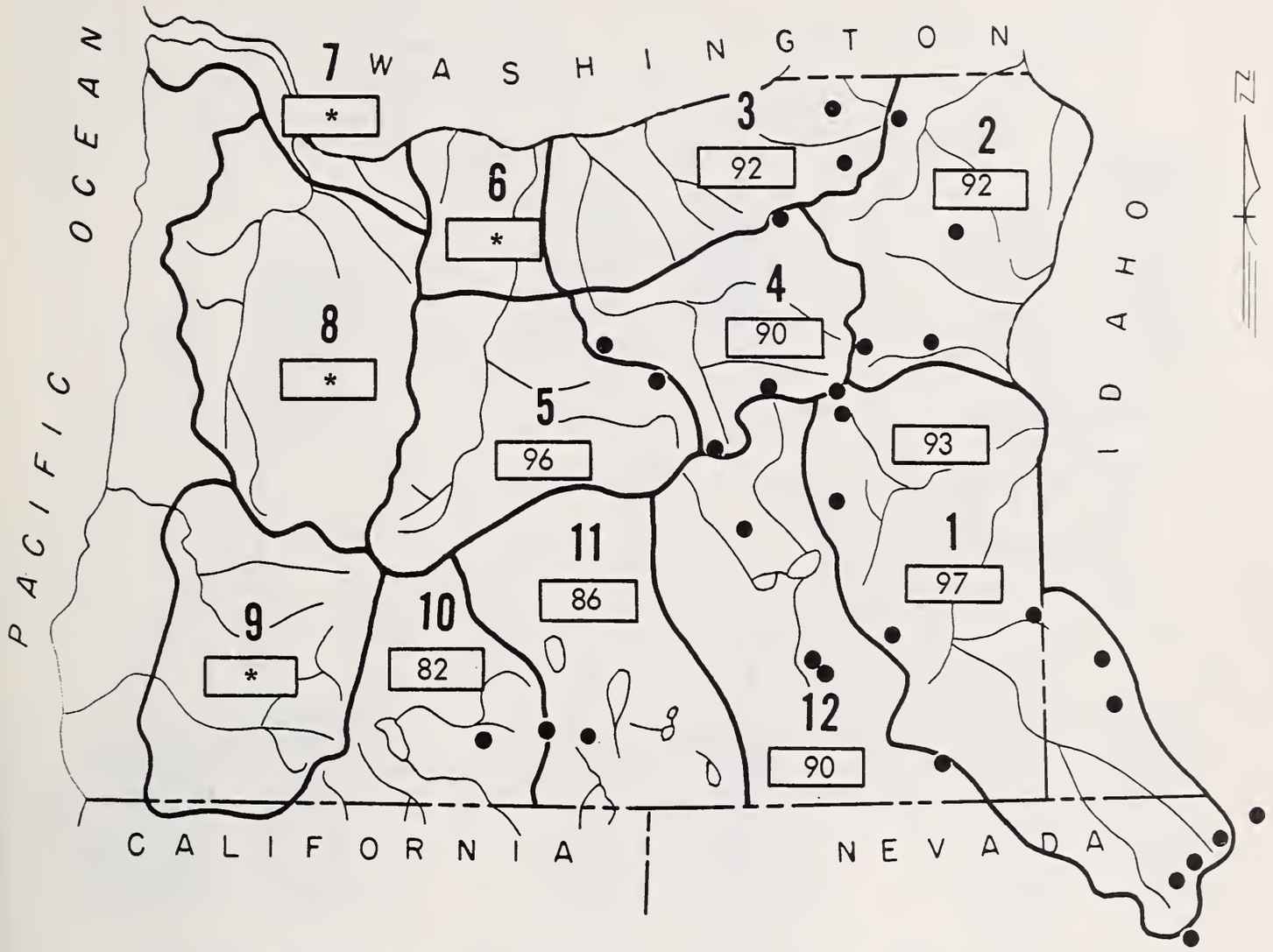
(Percent of average maximum accumulation)

MAY 1, 1963



MOUNTAIN SOIL MOISTURE in OREGON
as percent of capacity

MAY 1, 1963



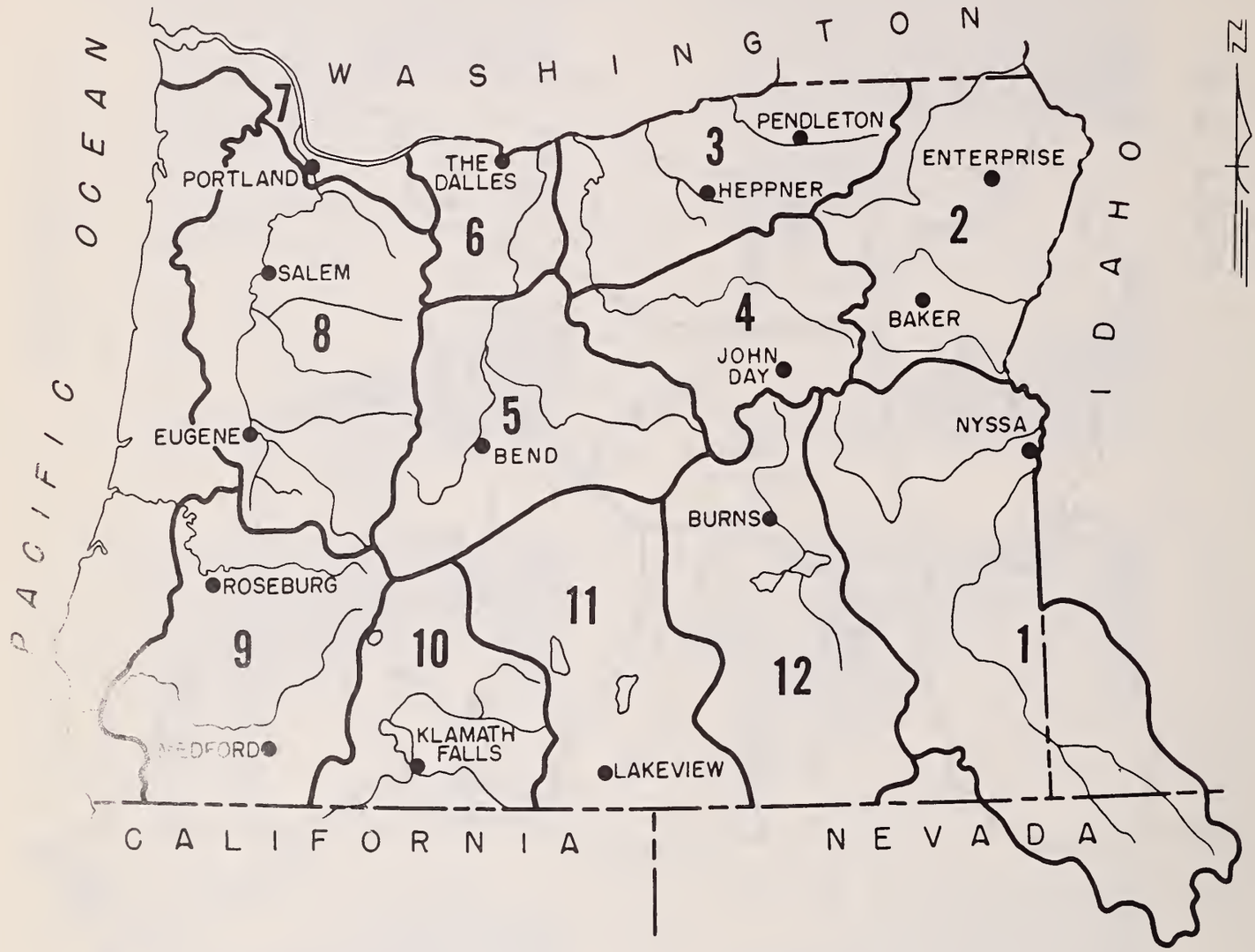
● Soil Moisture Station

**Moisture studies not yet developed in these areas.*

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

VALLEY PRECIPITATION in OREGON [a]

MAY 1, 1963

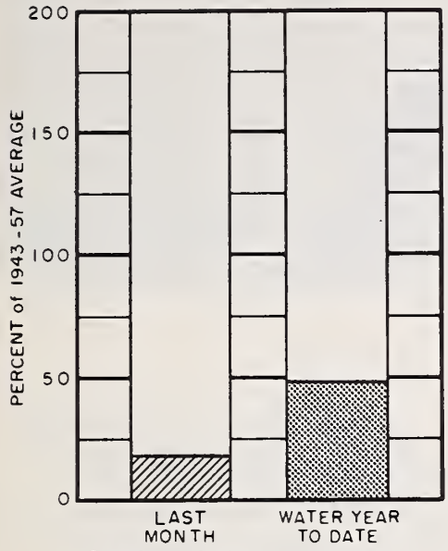


PRECIPITATION as PERCENT of the 1943-57 AVERAGE					
STATION	LAST MONTH	WATER YEAR TO DATE [b]	STATION	LAST MONTH	WATER YEAR TO DATE [b]
Baker Apt.	97	119	Lakeview	276	163
Bend	202	105	Medford Apt.	247	134
Burns	288	144	Nyssa	272	118
Enterprise	113	109	Pendleton Apt.	156	106
Eugene Apt	239	99	Portland Apt.	186	91
Heppner	312	128	Roseburg Apt.	272	93
John Day	223	139	Salem Apt.	184	92
Klamath Falls	220	104	The Dalles	256	91

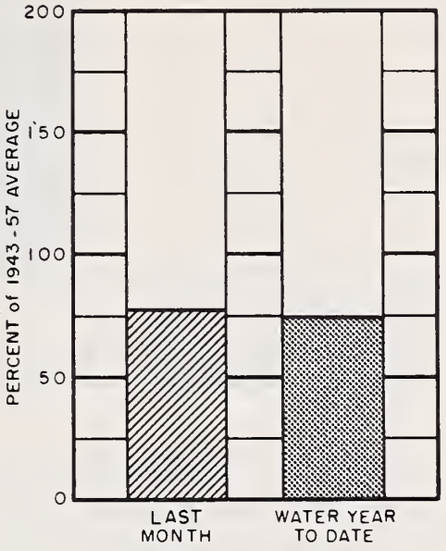
(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

CURRENT OREGON STREAMFLOW

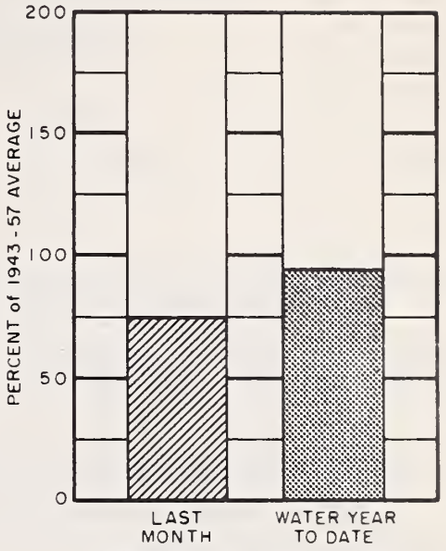
MAY 1, 1963



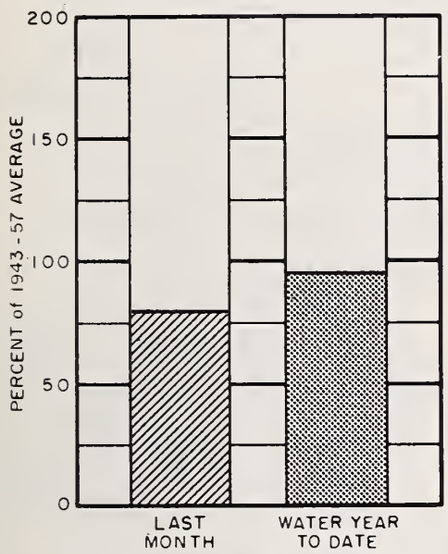
Owyhee Lake net inflow



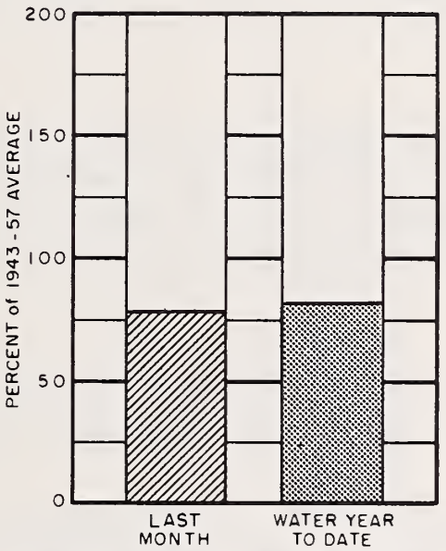
Umatilla near Umatilla



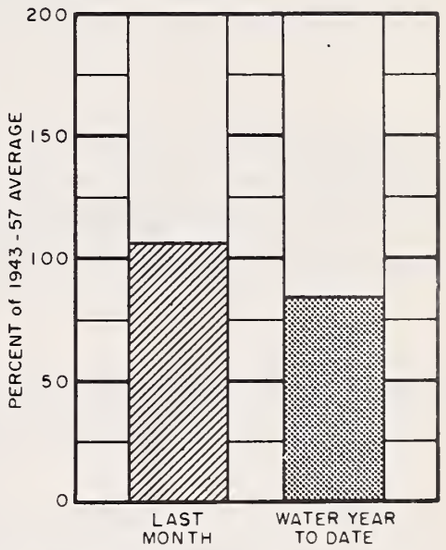
John Day at Service Creek



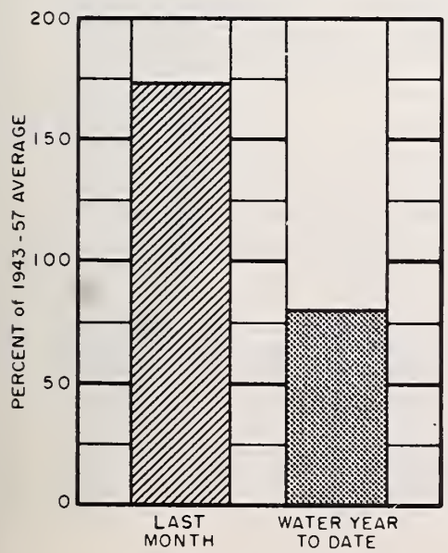
Deschutes at Moody



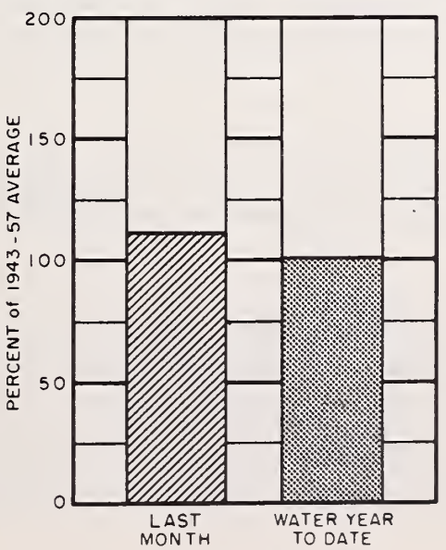
Hood and conduit near Hood River



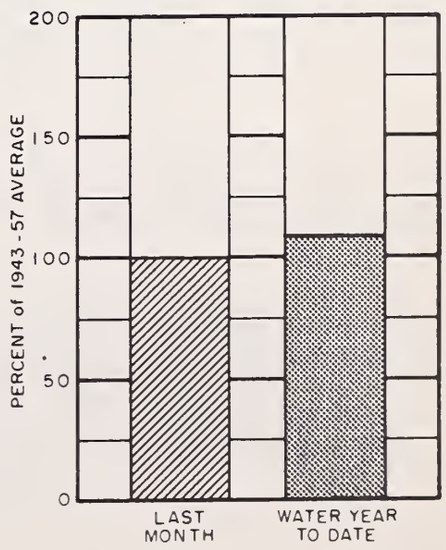
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

Data furnished by U.S. Geological Survey; The Pacific Power and Light Co.; and North and South Boards of Control Owyhee Project

WATER SUPPLY OUTLOOK
OWYHEE, MALHEUR WATERSHEDS
OREGON

as of
MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1963 irrigation water outlook in Malheur county has improved considerably aue to a series of cool, wet April storms that added thousands of acre feet of water to local reservoirs; resulted in the saving of stored water equivalent to one irrigation and added surprising amounts of snow in the high mountain watersheds above 7000 feet elevation. Streams heading at lower elevations are still expected to produce poor late season water supply.

SNOW COVER

Water content of the mountain snowpack increased generously at high elevations only, with 85 percent of average on the Owyhee and 186 percent of average on the Malheur. The Malheur snow was recorded at only one station, Blue Mountain Springs, where a water content of 10.8 inches was measured about May 1 compared with 2.3 inches last year at this date.

SOIL MOISTURE

Upper watershed soils have contined to improve in their water content with measurements averaging 97 percent of total capacity on the Owyhee and 93 percent on the Malheur.

RESERVOIR STORAGE

Stored water supplies in the Owyhee are 378,100 acre feet comparea with 391,100 a.f. one year ago. Antelope Reservoir has 28,700 acre feet which is near normal for this date.

Warmsprings held 114,900 acre feet on May 1 compared with 91,200 a.f. one year ago and Agency Valley reported 57,200 acre feet this year compared with 44,700 a.f. one year ago.

STREAMFLOW

May-September inflow to Owyhee is forecast at 40,000 acre feet or 19 percent of average. This amount, coupled with storage now on hand and with expected pumping, will provide a near average season.

Malheur River near Drewsey is forecast to flow 17,000 acre feet and the North Fork at Beulah, 20,000 acre feet May through September. With storage added, (plus 5,000 a.f. in Bully Creek) these forecasts indicate total water available to the Vale-Oregon and Warmsprings Irrigation Districts may be over 200,000 acre feet. This amount of water should allow a near average season for these irrigation districts.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Boulder Creek	Fair	Poor
Bully Creek	Fair	Poor
Cow Creek	Fair	Poor
Jordan Creek	Fair	Poor
Jordan Valley Irrig. Dist.	Average	Fair
McDermitt Creek	Fair	Poor
Oregon Canyon Creek	Fair	Poor
Owyhee Project	Average	Average
Succor Creek	Fair	Poor
Tenmile Creek	Fair	Poor
Vale Oregon Irrig. Dist.	Average	Fair
Warmsprings Irrig. Dist.	Average	Fair
Willow Creek (Reservoired)	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Agency Valley	60.0	57.2	44.7	54.0
Antelope	55.0	28.7	- -	29.8
Owyhee	715.0	378.1	391.1	617.5
Warmsprings	191.0	114.9	91.2	140.2

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
2140	Malheur near Drewsey	17	May-Sept.	36	47
		16	May-July	35	47
2175	Malheur, North Fork at Beulah[d]	20	May-Sept.	38	53
1825	Owyhee Reservoir net Inflow[g]	40	May-Sept.	214	19
		38	May-July	196	19

SOIL MOISTURE

STATION NAME	ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bear Creek (Nev.)	7800	72	16.9	4-1-63	7.8[i]	9.6[i]	8.6[i]
Big Bend (Nev.)	6700	48	16.7	4-30-63	16.1	16.5	16.3
Blue Mountain Springs	5900	42	16.9	4-24-63	14.2	14.3	11.1
Crane Prairie	5375	48	18.2	4-25-63	17.4[i]	17.7	17.7
Folly Farm	4450	30	12.5	3-28-63	9.9[i]	11.6	- -
Jack Creek, Lower (Nev.)	6800	48	8.7	4-29-63	8.6[i]	8.6	8.5
Jordan Valley	4250	48	19.3	3-27-63	16.7[i]	- -	- -
Mud Flat (Ida.)	5500	48	12.8	4-2-63	10.5[i]	8.5[i]	9.7[i]
Rodeo Flat (Nev.)	6800	42	11.0	4-30-63	10.9[i]	11.0[i]	11.0
Stinking Water	4800	48	21.9	3-28-63	21.5[i]	21.9[i]	- -
Taylor Canyon (Nev.)	6200	48	15.1	4-29-63	14.2[i]	14.9	13.8
Triangle (Ida.)	5150	48	16.2	4-2-63	14.4[i]	- -	- -

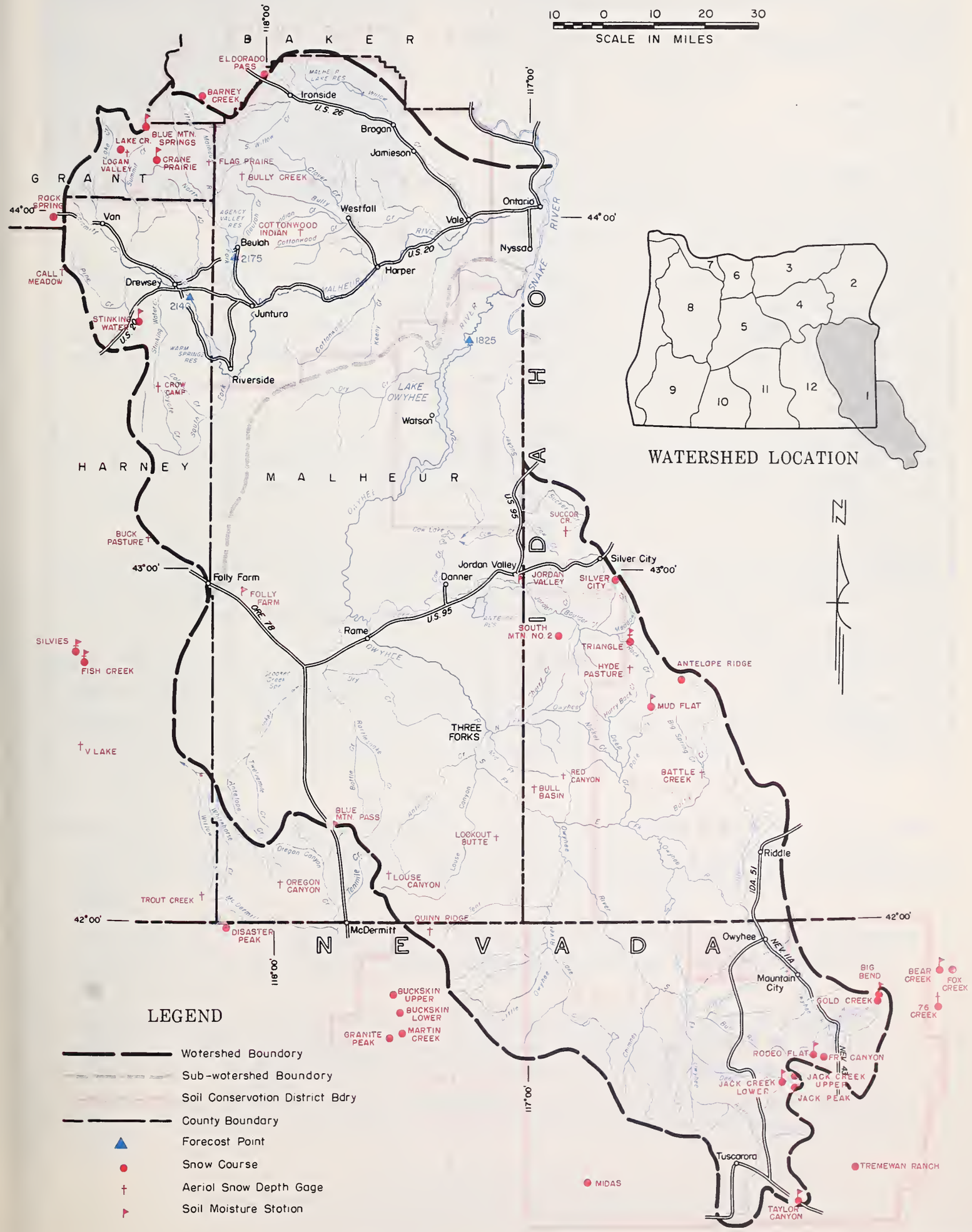
NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

SNOW

SNOW COURSE NAME	ELEVATION	CURRENT INFORMATION DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD WATER CONTENT (Inches) LAST YEAR	1943-57 AVERAGE
Antelope Ridge (Ida.)	5900	c				
Barney Creek	5950	c				
Battle Creek[e] (Ida.)	5700	c				
Bear Creek[e] (Nev.)	7800	4/29	56	18.6	25.1	21.2*
Big Bend (Nev.)	6700	4/30	T	T	0.0	1.6*
Blue Mountain Springs	5900	4/25	28	10.8	2.3	5.8**

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) USBR records of inflow. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

OWYHEE, MALHEUR WATERSHEDS



Owyhee, Malheur Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Buck Pasture [e]	5700	c				
Buckskin, Lower (Nev.)	6700	c				
Buckskin, Upper (Nev.)	7200	c				
Bull Basin [e] (Ida.)	5600	c				
Bully Creek [e]	5300	c				
Call Meadows [e]	5340	c				
Cottonwood-Indian [e]	4320	c				
Crane Prairie	5375	c				
Crow Camp [e]	5500	c				
Disaster Peak (Nev.)	6500	c				
Eldorado Pass	4600	4/30	0	0.0	0.0	- -
Fish Creek	7900	c				
Flag Prairie [e]	4750	c				
Fox Creek (Nev.)	6800	c				
Fry Canyon (Nev.)	6700	4/30	T	T	0.0	1.3*
Gold Creek (Nev.)	6600	4/30	0	0.0	0.0	0.0*
Granite Peak (Nev.)	7800	c				
Hyde Pasture [e] (Ida.)	5800	c				
Jack Creek, Lower (Nev.)	6800	4/29	9	2.2	0.0	- -
Jack Creek, Upper (Nev.)	7250	4/29	18	5.3	0.0	4.0*
Jack Peak (Nev.)	8420	4/29	81	24.0	35.1	26.8*
Lake Creek	5120	c				
Logan Valley	5100	c				
Lookout Butte [e]	5650	c				
Louse Canyon [e]	6440	c				
Martin Creek (Nev.)	6700	c				
Midas (Nev.)	7200	c				
Mud Flat (Ida.)	5500	c				
Oregon Canyon [e]	6950	c				
Quinn Ridge [e] (Nev.)	6300	c				
Red Canyon [e] (Ida.)	6500	c				
Rock Spring	5100	4/30	0	0.0	0.0	- -
Rodeo Flat (Nev.)	6800	4/30	T	T	0.0	1.7*
76 Creek [e] (Nev.)	7100	c				
Silver City (Ida.)	6400	c				
Silvies	6900	c				
South Mountain #2 (Ida.)	6340	c				
Stinking Water	4800	f				
Succor Creek [e] (Ida.)	6100	c				
Taylor Canyon (Nev.)	6200	4/29	0	0.0	0.0	0.0*
Tremewan Ranch (Nev.)	5700	4/30	0	0.0	0.0	0.0*
Triangle (Ida.)	5150	c				
Trout Creek [e]	7800	c				
"V" Lake [e]	6600	c				

WATER SUPPLY OUTLOOK
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
OREGON

as of
MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook for Baker, Union and Wallowa counties was very much improved by a cool, wet April. Snow accumulated in surprising amounts at higher elevations, resulting in increases in water supply forecasts for the remainder of the season. However, water supplies in the late season will be poor except for areas served by large streams flowing from the Wallowa where supplies will be fair.

SNOW COVER - Water content of the snowpack increased much more than the usual amounts for April and now stands at 79 percent of average for May 1st and 97 percent of last year at this time. The most notable increases to the snowpack occurred above 6000 feet in elevation.

SOIL MOISTURE - Soil moisture continued to improve below the snow line and now averages about 92 percent of total capacity. Watershed soils are in very good condition and will allow good yield to streamflow from any future rain storms or snowmelt.

RESERVOIR STORAGE - Unity Reservoir is full and spilling with 25,800 acre feet in storage which is the same as last year at this time.

Wallowa Lake has 29,200 acre feet of stored water while last year at this time it had only 20,100 acre feet. Storage in both of these reservoirs is above the 1943-57 average for May 1st.

STREAMFLOW - Streamflow forecasts in this area have improved during April and now range from 34 percent of the 1943-57 average or 6,500 acre feet (May-September) on Burnt River to 88 percent or 10,600 acre feet on the East Fork Wallowa for the April-September period.

The Powder River is expected to flow 25,000 acre feet or 56 percent for the May-September period and the Grande Ronde at LaGrande 56,000 acre feet or 47 percent for the same period.

Catherine Creek is forecasted to flow 39,000 acre feet or 68 percent for the May-September period; The Imnaha 250,000 or 80 percent; Hurricane Creek 40,000 or 82 percent and the Lostine 116,000 or 87 percent for the April-September period.

Smaller streams with low elevation watersheds are still expected to produce poor late season water supplies unless above average precipitation continues during the forecast period.

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Alder Slope	Fair	Fair
Baker Valley	Fair	Poor
Big Creek	Fair	Poor
Clover Creek (nr. N. Powder)	Fair	Poor
Cove	Fair	Poor
Durkee	Fair	Poor
Eagle Valley	Fair	Poor
Elgin	Fair	Poor
Enterprise-Joseph	Average	Fair
Hereford-Bridgeport	Average	Fair
Imnaha River	Average	Fair
LaGrande-Island City	Fair	Poor
Lostine-Wallowa	Average	Fair
No. Powder River-Wolf Cr.	Fair	Poor
Pine Valley	Fair	Poor
Powder River-Elk Creek	Fair	Poor
Summerville	Fair	Poor
Sumpter Valley	Fair	Poor
Union-Hot Lake	Fair	Fair
Unity	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Unity	25.2	25.8	25.8	21.8
Wallowa Lake	37.5	29.2	20.1	18.7

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
3305	Bear near Wallowa	64	April-Sept.	74	86
2730	Burnt near Hereford[d]	6.5	May-Sept.	19	34
		5.5	May-June	15	37
3200	Catherine near Union	39	May-Sept.	57	68
3190	Grande Ronde at LaGrande	56	May-Sept.	119	47
		55	May-July	116	47
3295	Hurricane near Joseph	40	April-Sept.	49	82
2920	Imnaha at Imnaha	250	April-Sept.	314	80
3300	Lostine near Lostine	116	April-Sept.	133	87
2755	Powder near Baker	25	May-Sept.	44	56
		24	May-July	43	56
3250	Wallowa, East Fork near Joseph[d]	10.6	April-Sept.	12.1	88
		8.5	April-July	9.7	88

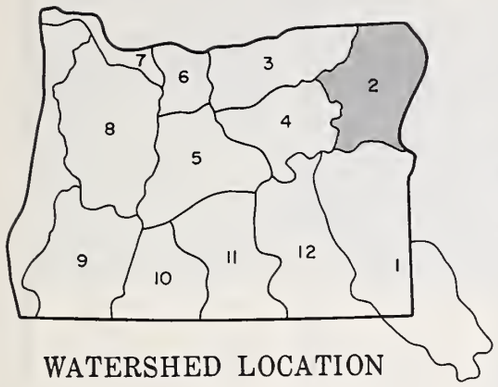
SOIL MOISTURE

STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Summit	5100	36	16.8	4-30-63	15.6	11.4	16.1
Emigrant Springs	2925	48	22.3	4-26-63	20.8	21.5	21.8
Tollgate	5070	48	22.2	4-29-63	20.1	20.0	20.5

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Water content partly estimated. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted averages.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



WATERSHED LOCATION

10 0 10 20 30
SCALE IN MILES

WASHINGTON

OREGON

IDAHO

UMATILLA

UNION

WALLOWA

GRANT

BAKER

MALHEUR

46°00'

45°00'

117°00'

118°00'

TOLLGATE
Looking Glass
ORE 204
Elgin
Wallowa
ORE 82
Imnaha
Summerville
MEACHAM
US 30
ORE 82
Enterprise
STANLEY
Joseph
3190
Lo Grande
Cove
MOSS SPRING
LUCKY STRIKE
Starkey
Union
BALD MTN
MIRROR LAKE
ANEROID LAKE NO. 2
ANEROID LAKE NO. 1
SCHOOLMARM
COUNTY LINE
BEAVER RES.
LADD SUMMIT
TAYLOR GREEN
Medical Springs
North Powder
LITTLE ALPS
ANTHONY LAKE
SCHNEIDER MEADOWS
Haines
EILERTSON MEADOWS
Keating
Holfwoy
Pine
BOURNE
GOLDEN CENTER
GOODRICH LAKE
Boker
ORE 86
Richland
Sumpter
TIPTON
US 30
Durkee
BLUE MTN SUMMIT
COOLEY MTN.
2730
2755
Hereford
Bridgeport
Unity
BARNEY CREEK
ELDORADO PASS
Huntington
SNAKE RIVER

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Soil Moisture Station
- Aeriol Snow Depth Gage

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Aneroid Lake #1	7480	4/28	101	35.6	40.0	41.2**
Aneroid Lake #2	7000	4/27	83	29.1	31.8	30.4**
Anthony Lake	7125	4/24	72	24.4	31.2	- -
Bald Mountain [e] (Ore.)	6700	[f]				
Barney Creek	5950	[c]				
Beaver Reservoir	5340	4/26	18	7.4	3.6	7.3**
Big Sheep [e]	6200	4/30	48	16.8	- -	- -
Blue Mountain Summit	5098	4/30	1	0.3	0.4	1.5**
Bourne	5800	4/29	14	6.0	3.2	- -
County Line	4800	[c]				
Dooley Mountain	5430	4/30	0	0.0	0.0	- -
Eilertson Meadows	5400	4/24	6	1.9	0.0	- -
Eldorado Pass	4600	4/30	0	0.0	0.0	- -
Gold Center	5340	4/29	2	1.4	0.0	- -
Goodruch Lake	6775	[f]				
Little Alps	6200	4/24	32	9.4	9.8	- -
Lucky Strike	5050	4/25	30	10.1	4.8	- -
Meacham	4300	4/26	0	0.0	0.0	2.6**
Mirror Lake [e]	8200	4/30	174 [j]	60.9	- -	- -
Moss Spring	5850	4/25	33	11.5	12.9	- -
Schneider Meadows	5400	4/26	50	19.1	22.4	- -
Schoolmarm	4775	[c]				
Standley [e]	7400	4/30	64	22.4	23.2	- -
Taylor Green	5740	[c]				
Tipton	5100	4/30	0	0.0	0.0	1.8**
Tollgate	5070	4/29	19	9.1	9.2	18.1**
TV Ridge [e]	5670	4/30	T	T	- -	- -

WATER SUPPLY OUTLOOK
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
OREGON

as of
MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook for Umatilla-Walla Walla watersheds has improved during April although still below average. A series of cool, wet storms increased the snowpack at higher elevations while above normal rainfall on lower watersheds produced much-needed increases in water supplies for the area. Lower elevation watersheds are still expected to produce poor late season flows.

SNOW COVER - Water content of the snowpack increased during April at Lucky Strike, Battle Mountain, and Arbuckle Mountain where usually spring snowmelt would have resulted in a decrease in water content on May 1. A slight decrease was observed at Tollgate on the head of the Walla Walla but an average of all courses now indicates they are 157 percent of last year at this time, but only 41 percent of the May 1 average.

SOIL MOISTURE - Soil moisture measurements indicate good increases to watershed soils and now average 92 percent of total capacity. The watersheds are well-primed and should produce good yield to runoff from any future storms.

RESERVOIR STORAGE - Cold Springs Reservoir is full with 50,000 acre feet in storage. This is slightly better than the average of 48,800 a.f. for May 1.

McKay Reservoir received a good April inflow and now has 59,500 acre feet, which is 125 percent of last year at this time, but still only 90 percent of the 1943-57 average for May 1.

STREAMFLOW - Streamflow was better in April than expected due to much above normal precipitation.

Forecasts of streamflow for the remainder of the season range from 52 percent for McKay Creek for the May-July period to 65 percent for Butter Creek for the May-September period. The Umatilla is expected to flow 35,000 acre feet or 59 percent near Gibbon and 55,000 acre feet or 56 percent at Pendleton during the May-September period.

Walla Walla South Fork forecast is 37,000 acre feet or 64 percent of the average May-September.

Low elevation streams are still expected to produce poor late season flows unless above normal rainfall continues throughout the irrigation season.

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Birch Creek	Fair	Poor
Butter Creek	Fair	Poor
Dry Creek	Fair	Poor
Dugger Creek	Fair	Poor
Johnson Creek	Fair	Poor
McKay Creek	Fair	Poor
Mill Creek	Fair	Poor
Mud Creek	Fair	Poor
Pine Creek	Fair	Poor
Rhea Creek	Fair	Poor
Rock Creek	Fair	Poor
Umatilla R. (Cold Spgs. Res.)	Average	Fair
Umatilla River, Main	Fair	Poor
Umatilla River (McKay Res.)	Average	Fair
Walla Walla River, Little	Fair	Poor
Walla Walla River, Main	Fair	Poor
Walla Walla River, N. Fork	Fair	Poor
Walla Walla River, S. Fork	Fair	Poor
Willow Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cold Springs	50.0	50.0	50.0	48.8
McKay	73.8	59.5	47.7	66.4

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
0320	Butter Creek near Pine City	3.2	May-Sept.	4.9	65
0225	McKay near Pilot Rock	7.0	May-July	13.5	52
0200	Umatilla near Gibbon	35	May-Sept.	59	59
0210	Umatilla at Pendleton	55	May-Sept.	99	56
		53	May-July	94	56
0100	Walla Walla, South Fork near Milton	37	May-Sept.	58	64
		29	May-July	44	65

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Athena-Weston	1700	48	18.7	4-29-63	15.9	15.5	16.2
Battle Mountain Summit	4340	48	13.8	4-25-63	13.8	13.2	13.0
Emigrant Springs	3925	48	22.3	4-26-63	20.8	21.5	21.8
Tollgate	5070	48	22.2	4-29-63	20.1	20.0	20.5

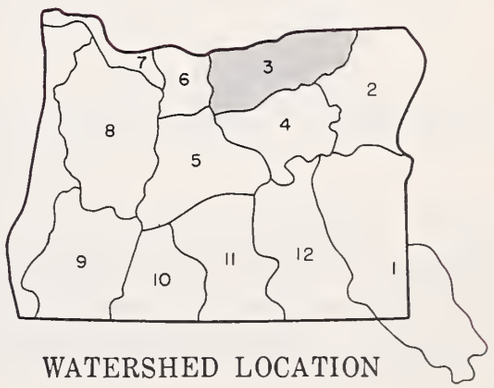
NOTE: The soil moisture figures published herein are not camparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Nearest current data. (h) Partly estimated. (*) 1943-57 adjusted average. (**) Average for 5 or more years in base period.

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Soil Moisture Station



WATERSHED LOCATION

Umatilla, Walla Walla, Willow, Rock, Lower John Day Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Arbuckle Mountain	5400	4/26	5	1.8	0.0	- -
Battle Mountain Summit	4340	4/25	4	1.0	0.0	- -
Blue Mountain Camp	4300	4/29	0	0.0	- -	- -
Emigrant Springs	3925	4/26	0	0.0	0.0	1.6**
Lucky Strike	5050	4/25	30	10.1	4.8	- -
Meacham	4300	4/26	0	0.0	0.0	2.6**
Tollgate	5070	4/29	19	9.1	9.2	18.1**
Weston Mountain	2700	4/29	0	0.0	- -	- -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
UPPER JOHN DAY WATERSHEDS
OREGON

as of
MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1963 water supply outlook for the Upper John Day area has improved considerably due to a cool, wet April. Surprising increases in the snowpack were noted at higher elevations while rains continued to prime lower watershed soils. However, water supplies should be about the same as in 1961 unless above normal rain continues to fall.

SNOW COVER

Water content of the snowpack increased much more than usual during April, particularly at higher elevations, and now averages 118 percent of average for May 1 and 138 percent of last year at this time. Cool weather allowed the snowpack to accumulate instead of beginning to melt as would usually happen during April.

SOIL MOISTURE

Watershed soil moisture continued to improve and now averages 90 percent of total capacity. The soil is in very good condition to produce good runoff yields from future rains or snowmelt.

STREAMFLOW

The John Day at Service Creek* flowed 75 percent of its April average and has produced 94 percent of the average October 1 to May 1 streamflow.

Streamflow forecasts have increased as a result of the cool, wet April weather. Strawberry Creek is expected to flow 5,000 acre feet or 55 percent of average for the April-September period. The John Day at Prairie is forecasted to flow 25,000 acre feet or 46 percent and John Day at Ritter 57,000 a.f. or 44 percent of the 1943-57 average for this same April-September period.

Streams with low elevation watersheds are still expected to have poor late season water supplies unless above normal precipitation continues during the irrigation season.

* Preliminary data from U. S. Geological Survey, Portland, Oregon.

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Beech Creek	Fair	Poor
Beech Cr.-Fox-Long Crs.	Fair	Poor
Bridge-Mountain Creeks	Fair	Poor
Camas Creek	Fair	Poor
Cherry Creek	Fair	Poor
Indian-Pine Creeks	Fair	Poor
John Day River, Main Fork	Fair	Poor
John Day River, Mid. Fork	Fair	Poor
John Day River, N. Fork	Fair	Poor
John Day River, S. Fork	Fair	Poor
Monument-Kimberly	Fair	Poor
Strawberry Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
0385	John Day at Prairie City	25	April-Sept.	54	46
		23	April-July	49	47
0440	John Day, Middle Fork at Ritter	60	April-Sept.	135	44
		57	April-July	131	44
0375	Strawberry near Prairie City	5.0	April-Sept.	9.1	55

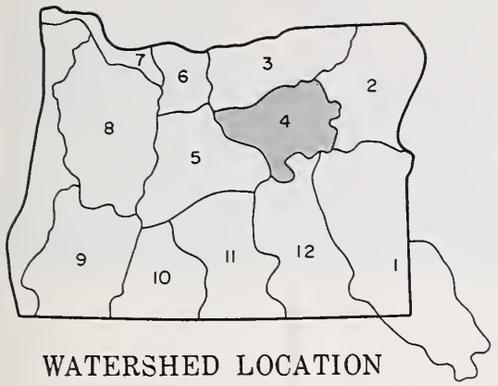
SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Battle Mountain Summit	4340	48	16.8	4-25-63	13.8	13.2	13.0
Blue Mountain Springs	5900	42	16.9	4-24-63	14.2	14.3	11.1
Blue Mountain Summit	5100	36	16.8	4-30-63	15.6	11.4	16.1
Derr	5670	24		c			
Marks Creek	4540	36	14.1	4-26-63	13.5	13.3	13.5
Snow Mountain	6300	48	16.7	3-25-63	14.9[h]	15.0[h]	- -
Starr Ridge	5150	36	10.6	4-26-63	10.5	10.2	9.8

NOTE: The soil moisture figures published herein are <u>not</u> comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Nearest current data. (i) Partly estimated. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

UPPER JOHN DAY WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- Forecast Point
- Snow Course
- Soil Moisture Station
- Aerial Snow Depth Gage

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Anthony Lake	7125	4/24	72	24.4	31.2	- -
Arbuckle Mountain	5400	4/26	5	1.8	0.0	- -
Battle Mountain Summit	4340	4/25	4	1.0	0.0	- -
Beech Creek Summit	4800	4/26	7	2.1	0.0	- -
Blue Mountain Springs	5900	4/25	28	10.8	2.3	5.8**
Blue Mountain Summit	5098	4/30	1	0.3	0.4	1.5**
Derr	5670	c				
East Fork Canyon [e]	5700	4/28	8	2.9	0.0	- -
Gold Center	5340	4/29	2	1.4	0.0	- -
Indian Creek Butte [e]	6550	4/28	52	18.7	8.8	- -
Izee Summit	5293	4/25	6	1.7	0.0	1.6**
Lucky Strike	5050	4/25	30	10.1	4.8	- -
Marks Creek	4540	4/26	0	0.0	0.0	- -
Ochoco Meadows	5200	c				
Olive Lake	6000	4/29	34	12.3	16.6	- -
Schoolmarm	4775	c				
Snow Mountain	6300	c				
Starr Ridge	5150	4/26	3	1.0	0.0	0.9**
Tipton	5100	4/30	0	0.0	0.0	1.8**
Williams Ranch	4500	c				

WATER SUPPLY OUTLOOK
UPPER DESCHUTES, CROOKED WATERSHEDS
OREGON

as of

MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook for Deschutes-Crookea watersheas has improvea slightly over "short" supplies in prospect on April 1. A cool, wet April has adaea surprising amounts of snow to higher elevations of the watersheds.

Irrigation dependent on natural flow from low elevation watersheas are still expectea to have poor late season water supplies while lands servea from storea water supplies shoula have a near average season.

SNOW COVER - Water content of higher elevation snow courses along the riage of the Cascades increasea more than twice the usual amounts auring April. The area as a whole is still only 46 percent of average and only 62 percent of last year.

Marks Creek was the only snow course measurea on Crookea River watersheas ana it haa no snow as is the usual for it on May 1.

SOIL MOISTURE - Current soil moisture measurements at Marks Creek inaicate soils in this area are 96 percent of total capacity.

RESERVOIR STORAGE - Reservoir storage on the main Deschutes system is 113 percent of last year and 133 percent average for May 1. Crane Prairie has 50,900 acre feet as compared to 36,100 last year at this time. Crescent Lake has 61,700 a.f. and had 46,600 acre feet on May 1. Wickiup has 199,900 acre feet and had 194,100 last year. Prineville Reservoir on Crookea River has 146,900 acre feet and haa 147,700 a.f. last year on May 1. Ochoco Reservoir has 43,600 acre feet in storage and haa 42,300 a.f. last year. The average for May 1 is 39,700 acre feet.

STREAMFLOW - Streamflow forecasts have been raisea slightly due to a cool, wet April increasing the high elevation snowpack. The forecasts now range from 38 percent or 6,000 a.f. for the May-September inflow to Ochoco Reservoir to 67 percent or 37,000 acre feet for the April through September flow of Squaw Creek. Crane Prairie inflow is expected to be 80,000 acre feet or 56 percent and Crescent Creek is forecasted at 14,000 acre feet or 45 percent for the April-September period.

The Deschutes at Benham Falls is expected to flow 390,000 acre feet or 65 percent for the April-September period. The Little Deschutes is forecasted at 45 percent of average or 51,000 acre feet for the April-September period. Tumalo Creek is expectea to flow 35,000 acre feet or 64 percent for the same perioa.

Crookea River near Post is forecasted at 40 percent of the May-September period or 20,000 acre feet.

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Arnold Irrigation District	Average	Fair
Bear Creek	Fair	Poor
Beaver Creek	Fair	Poor
Camp Creek	Fair	Poor
Central Oregon Irrig. Dist.	Average	Fair
Crooked River (abv. Res.)	Fair	Poor
Deschutes River	Fair	Poor
Hay-Trout Creeks	Fair	Poor
Lone Pine Irrig. Dist.	Average	Fair
Mill Creek	Fair	Poor
North Unit Irrig. Dist.	Average	Fair
Ochoco Creek (abv. Res.)	Fair	Poor
Plainview-McCallister	Average	Poor
Sisters Irrigation Dist.	Average	Fair
Snow Creek Irrig. Dist.	Average	Fair
Squaw Creek Irrig. Dist.	Average	Fair
Swalley Ditch	Average	Average
Tumalo Project	Average	Average
Walker Basin Irrig. Dist.	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Crane Prairie	55.3	50.9	36.1	47.6
Crescent Lake	117.2	61.7	46.6	47.1
Ochoco	47.5	43.6	42.3	39.7
Prineville	153.0	146.4	147.7	- -
Wickiup	182.0	199.9	194.1	140.4

Note: The U. S. Bureau of Reclamation indicates that dead storage in the amount of 5360 acre feet may be included in the current storage figure for Crescent Lake.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
0535	Crane Prairie Reservoir total Inflow	80	April-Sept.	143	56
0600	Crescent at Crescent Lake[d]	14.0	April-Sept.	41	45
		12.0	April-July	25	48
0795	Crooked near Post	20	May-Sept.	50	40
		19.0	May-July	48	.40
0645	Deschutes at Benham Falls[d]	390	April-Sept.	602	65
		270	April-July	404	67
0500	Deschutes below Snow Creek	41	April-Sept.	74	56
0630	Deschutes, Little near Lapine[d]	51	April-Sept.	113	45
		46	April-July	100	46
0848	Ochoco Reservoir net Inflow	6.0	May-Sept.	16.0	38
0555	Odell near Crescent	19.0	April-Sept.	34	56
0750	Squaw near Sisters	37	April-Sept.	55	67
0730	Tumalo near Bend[d]	35	April-Sept.	55	64

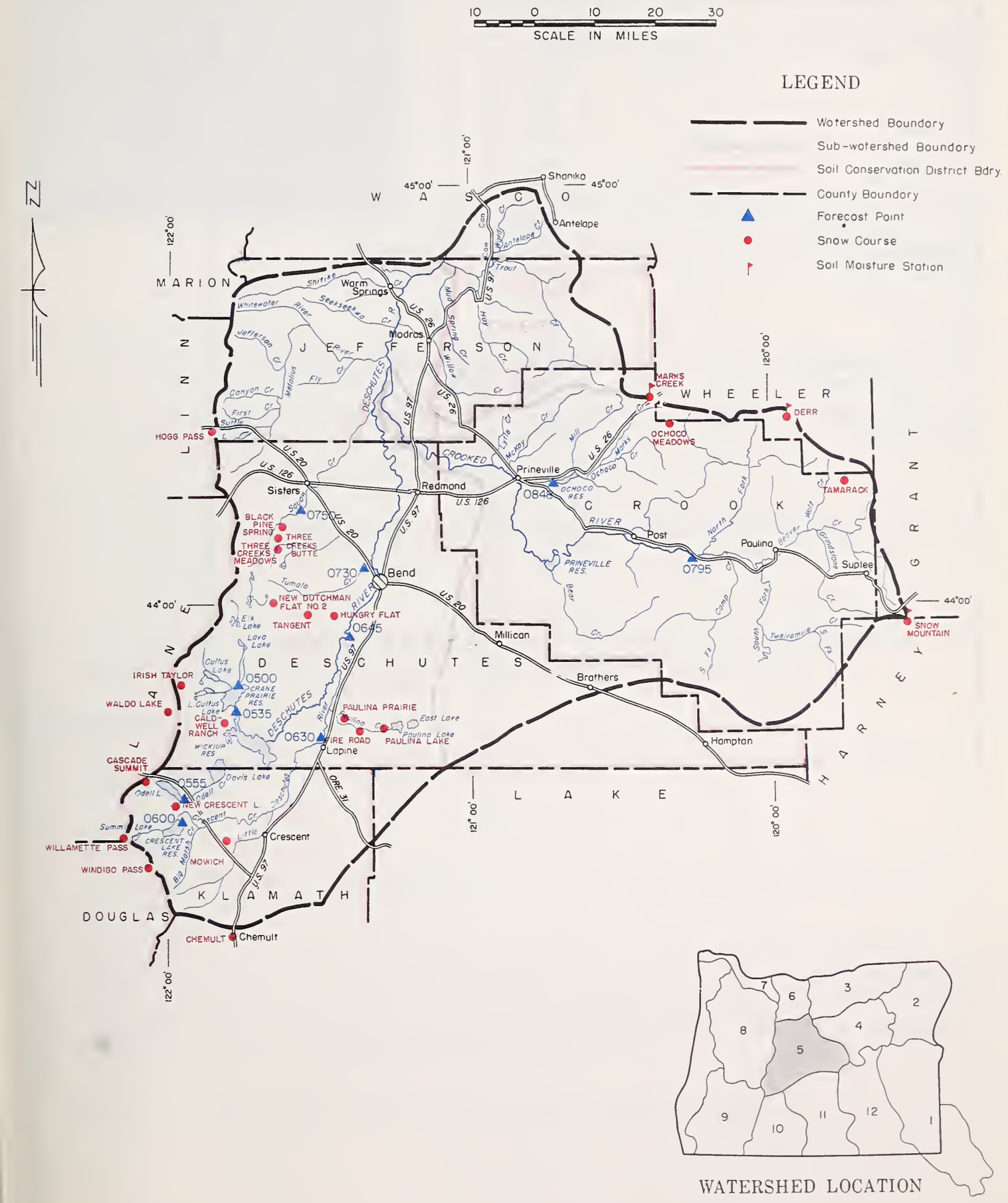
SOIL MOISTURE

STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	SOIL MOISTURE (Inches) THIS YEAR	SOIL MOISTURE (Inches) LAST YEAR	SOIL MOISTURE (Inches) 2 YEARS AGO
Marks Creek	4540	36	14.1	4-26-63	13.5	13.3	13.5
Snow Mountain	6300	48	16.7	3-25-63	14.9[h]	15.0[h]	- -

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average. (h) Nearest current data.

UPPER DESCHUTES, CROOKED WATERSHEDS



Upper Deschutes, Crooked Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Black Pine Spring	4600	4/30	0	0.0	0.0	0.8**
Caldwell Ranch	4400	c				
Cascade Summit	4880	4/29	24	10.2	20.2	31.8**
Chemult	4760	4/28	0	0.0	0.0	0.5**
Derr	5670	c				
Fire Road	5050	4/24	5	1.3	0.0	- -
Hogg Pass	4755	4/26	58	22.6	41.2	53.5**
Hungry Flat	4400	4/29	0	0.0	0.0	0.0**
Irish-Taylor	5500	c				
Marks Creek	4540	4/26	0	0.0	0.0	- -
Mowich	4700	4/25	0	0.0	0.0	- -
New Crescent Lake	4800	4/25	0	0.0	0.0	6.3**
New Dutchman Flat #2	6400	4/29	87	36.1	53.4	59.0*
Ochoco Meadows	5200	c				
Paulina Lake	6330	4/24	41	15.3	14.1	- -
Paulina Prairie	4285	4/24	0	0.0	0.0	- -
Snow Mountain	6300	c				
Tamarack	4800	c				
Tangent	5400	4/29	12	4.8	5.2	11.9*
Three Creeks Butte	5200	4/30	0	0.0	0.0	- -
Three Creeks Meadows	5600	4/30	T	T	16.4	16.8**
Waldo Lake	5500	c				
Willamette Pass	5600	4/25	79	27.4	39.0	45.9*
Windigo Pass	5800	4/25	73	27.4	42.7	52.5**

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
OREGON

as of
MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1963 water supply outlook for Hood River and Wasco counties has improved during April. Cool, wet weather increased the snowpack at higher elevations much more than the usual for April resulting in increases in streamflow forecasts for the area. However, streamflow will be better than in 1944 and 1941.

SNOW COVER

Water content of the snowpack is now 42 percent of average and 69 percent of last year at this time.

SOIL MOISTURE

Above normal precipitation continued to improve the soil moisture. Watershed soils are well primed and should produce good yield to runoff from future storms.

RESERVOIR STORAGE

Clear Lake now has 5,600 acre feet in storage as compared to 6,100 acre feet a year ago on May 1st.

STREAMFLOW

The flow of Hood River near Hood River* was 78 percent of average during April and has been 81 percent of average for the October 1st - May 1st period.

Streamflow forecasts have been raised as a result of a cool, wet April. They now range from 60 percent or 160,000 acre feet for Hood River near Hood River for the May-September period to 65 percent for 115,000 acre feet on White River for the April-September period. The West Fork of Hood River is expected to flow 111,000 acre feet or 64 percent for the April-September period.

* Preliminary data from U. S. Geological Survey, Portland, Oregon.

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Aldridge Ditch	Fair	Poor
Badger Creek	Fair	Fair
Dee Irrigation Dist.	Fair	Poor
East Fork Irrig. Dist.	Fair	Fair
Farmers Irrig. Dist.	Fair	Poor
Hood River Irrig. Dist.	Fair	Fair
Juniper Flat Irrig. Dist.	Fair	Fair
Middle Fork Irrig. Dist.	Fair	Poor
Mile Creeks	Fair	Poor
Mill Creek	Fair	Poor
Mount Hood Irrig. Dist.	Fair	Poor
Rock-Gate-Threemile Crs.	Fair	Fair
Tygh Creek	Fair	Poor
White River	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	- -	5.6	6.1	- -

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
1210	Hood near Hood River[d]	160	May-Sept.	268	60
		128	May-July	213	60
1185	Hood, West Fork near Dee	111	April-Sept.	174	64
		97	April-July	151	64
1015	White below Tygh Valley	115	April-Sept.	178	65
		105	April-July	161	65

SNOW

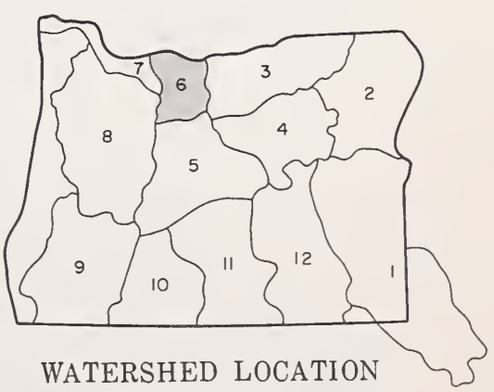
SNOW COURSE NAME	ELEVATION	CURRENT INFORMATION: DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD: WATER CONTENT (Inches) LAST YEAR	1943-57 AVERAGE
Brooks Meadows	4300	c				
Clear Creek Dam	3000	c				
Clear Lake	3500	4/29	2	0.8	0.0	11.8**
Clear Lake (Experimental)	3500	4/29	8	3.1	2.9	- -
Cooper Spur	3490	c				
Greenpoint Reservoir	3400	c				
Knebal Springs	3850	c				
Lambert Point	7000	c				
Parkdale	1770	c				
Phlox Point	5600	4/26	83	35.9	53.3	71.4**
Pinnacle Ridge	3495	c				
Red Hill[h]	4400	c				
Still Creek	3700	4/29	16	7.1	11.6	21.2**
Switchback	3255	c				
Tilly Jane	6000	4/28	51	22.3	- -	- -
Ulrich Ranch Junction	3350	c				
Upper Valley	2530	c				

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.
(h) Water content for April 1 published as 3.0 and should have been 3.3.

HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course



WATERSHED LOCATION

WATER SUPPLY OUTLOOK
LOWER COLUMBIA WATERSHEDS
OREGON

as of
MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Much below average flow if forecast for the lower Columbia during the May-September 1963 period. The forecast as of this date, 69,000,000 acre feet or 75 percent of average, is less than for any year since 1944 and in the lower 10 percent of record.

SNOW COVER

As compared to earlier months of this past winter, snow cover is relatively higher over the Basin. Very little snowmelt occurred during April. The precentage of average for May 1 ranges from about 50 percent of average in the Oregon and Washington Cascades up to 80 to 90 percent of average along the Continental Divide in Montana and Canada. In a few areas of the Basin more snow accumulated during April than for the winter prior to April 1, but did not make up the deficit of early and mid-winter.

SOIL MOISTURE

Soils are wet over the Basin except for the highest mountain elevations in the upper basin, which is typical for this date.

WATER SUPPLY OUTLOOK

High water problems will be at a minimum as a result of snowmelt runoff. Shortages of irrigation water are still expected for smaller Snake River tributaries in Idaho, although there has been some improvement from a month ago. Water supplies will be adequate along the larger tributaries of both the Snake and Columbia.

The winter flows for the Columbia at the Dalles* are as follows:

Month	Percent of Average Discharge (1943-57)
October	111 Adjusted for storage
November	116 " " "
December	124 " " "
January	93 " " "
February	145 " " "
March	95 " " "
April	73 " " "

* From preliminary data furnished by U. S. Geological Survey, Portland, Oregon.

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STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
1057	Columbia at The Dalles	69,000	May-Sept.	92,000	75
		41,750	May-June	58,000	72

HISTORICAL DATA (Columbia River at The Dalles)

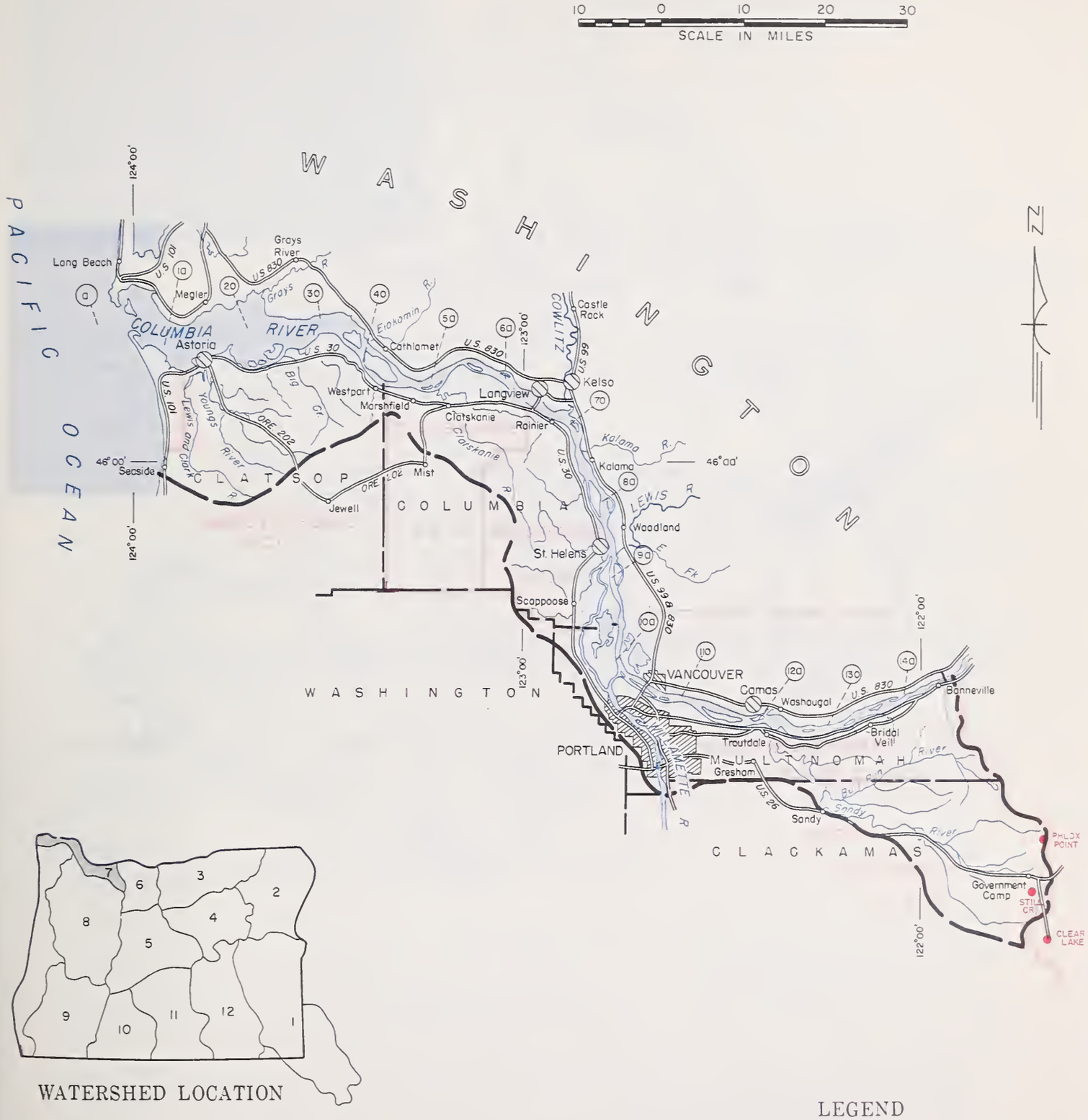
YEAR	STREAMFLOW[c] (1,000 A.F.) APR.— SEPT.	APR. — JUNE	MAY — JUNE	PEAK[e] (1,000 c.f.s)	DATE
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May 11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1943-57 Avg.	106,100	72,000	58,100	616	
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23
1960	97,000	64,000	48,000	442	June 6

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)[f]

VANCOUVER[g] GAGE (Weather Bu.)	FLOW AT THE DALLES (1,000 c.f.s)	DRAINAGE DISTRICT PUMPHOUSE SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
		RIVER MILES 118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	940	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	890	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	840	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	790	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	750	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	700	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	660	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	630	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	590	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	560	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20	530	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	510	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	480	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	450	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	430	22.4	16.5	15.5	13.0	10.5	9.3	8.7

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Observed flow corrected for storage in F.D.R., Kootenai, Pend Oreille, Flathead, Hungry Horse, Lake Chelan, Coeur d'Alene and Grand Coulee Equalizer. (d) Not scheduled. (e) Observed peak. (f) Based on Corps of Engineers automatic water stage recorder data. (g) Vancouver Weather Bureau gage zero is 1.82' above M.S.L.. All other readings are in feet above M.S.L.

LOWER COLUMBIA WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- (50) River Miles
- Snow Course

Lower Columbia Watersheds

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
WILLAMETTE WATERSHEDS
OREGON

as of

MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook for the Willamette Valley has improved during April. A series of cool, wet storms added surprising amounts of snow to the higher elevations along the ridge of the Cascades and indicated raises in streamflow forecasts.

SNOW COVER - Water content of the snowpack increased generously at high elevations. On April 1st, snow measurements were only 20 percent of average. Measurements taken about May 1 indicate an increase to 39 percent of the 1943-57 average. Even with this good increase the snowpack is only 64 percent of last year on May 1 and well below the May 1 average.

SOIL MOISTURE - Above average precipitation during April has continued to prime the soil to near capacity . Watershed soils are in good condition to shed future rain and snowmelt to streamflow.

RESERVOIR STORAGE - Storage in the six multi-purpose reservoirs operated by the Corps of Army Engineers is slightly above average for this time of year and nearly the same as last year on May 1st.

STREAMFLOW - The Middle Fork of the Willamette* flowed 105 percent of the April average and 84 percent since October 1.

Streamflow forecasts have been raised due to above normal precipitation during April and now range from 57 percent or 105,000 acre feet for the Clackamas at Big Bottom to 70 percent for the Middle Fork Willamette and the Willamette at Salem for the April-September period. The McKenzie is expected to flow 400,000 acre feet or 62 percent at McKenzie Bridge and 815,000 or 60 percent at Vida. (April-September).

The South Santiam is forecasted at 400,000 or 61 percent and the North Santiam 580,000 or 60 percent, (April-September). The Clackamas at Estacada and above Three Lynx is forecast at 58 percent of average or 510,000 and 390,000 acre feet respectively. Oak Grove Fork is expected to flow 120,000 acre feet or 61 percent April through September.

Row River forecast is 78,000 acre feet or 68 percent of the 1943-57 average for April-September period.

*Preliminary data from U. S. Geological Survey, Portland, Oregon.

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Calapooya	Fair	Poor
Clackamas	Fair	Fair
McKenzie	Fair	Fair
Molalla	Fair	Poor
Santiam, North	Fair	Fair
Santiam, South	Fair	Fair
Willamette, Coast Fork	Fair	Fair
Willamette, Middle Fork	Fair	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottage Grove	30.0*	24.4	25.0	27.0
Detroit	299.9*	266.1	273.7	189.5
Dorena	70.5*	57.7	59.6	52.4
Fern Ridge	94.2*	93.6	91.8	82.6
Hills Creek	200.0*	185.0	180.0	- -
Lookout Point	337.2*	299.9	300.3	- -

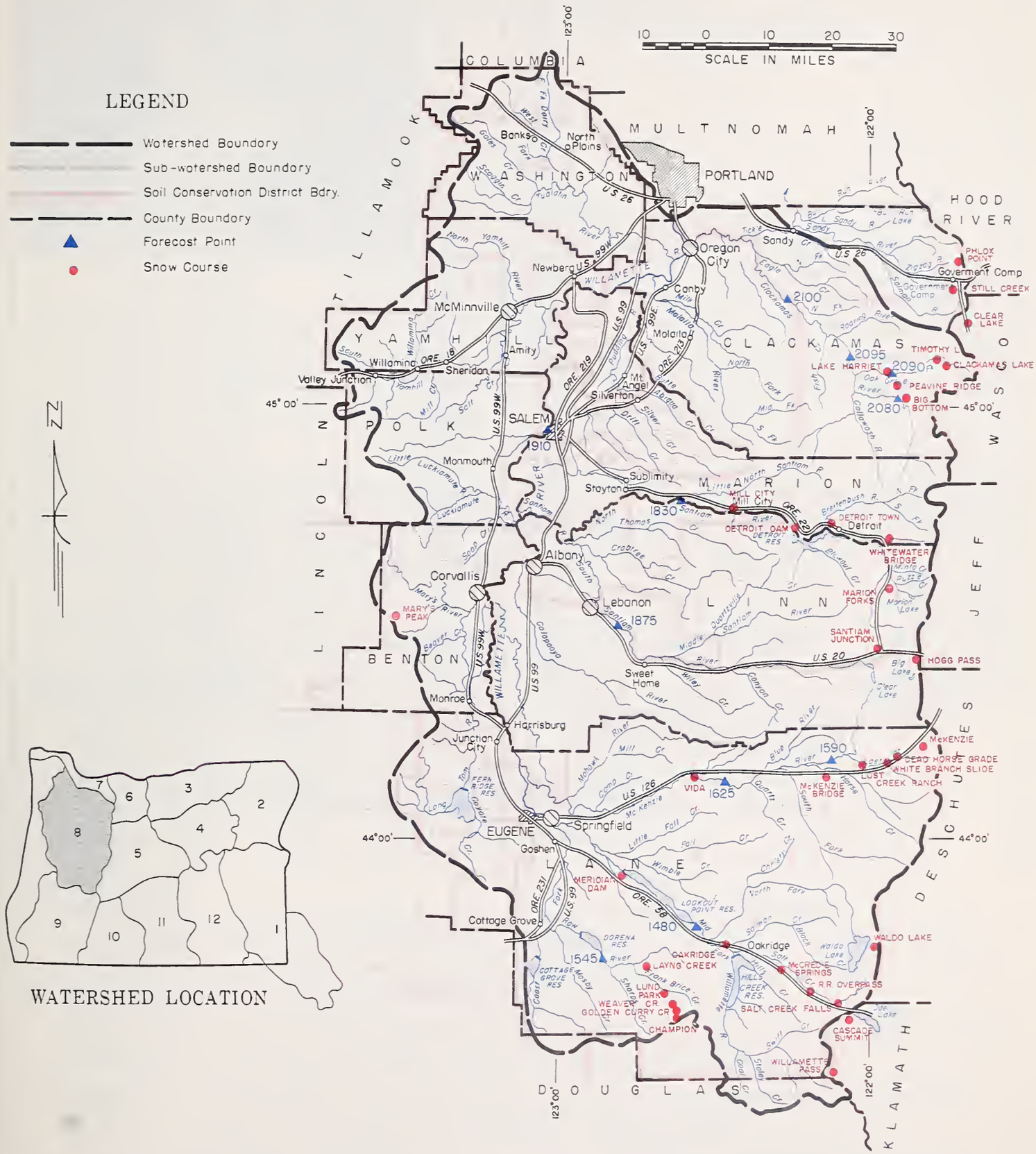
*Multiple purpose reservoir--space reserved primarily for flood runoff.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
2080	Clackamas at Big Bottom	105	April-Sept.	184	57
		84	April-July	150	56
2100	Clackamas at Estacada	510	April-Sept.	879	58
		430	April-July	763	56
2095	Clackamas above Three Lynx	390	April-Sept.	674	58
		325	April-July	578	56
1590	McKenzie at McKenzie Bridge	400	April-Sept.	640	62
		295	April-July	488	60
1625	McKenzie near Vida	815	April-Sept.	1362	60
		650	April-July	1120	58
2090	Oak Grove Fork above Power Intake	120	April-Sept.	198	61
		92	April-July	156	59
1545	Row near Dorena	78	April-Sept.	114	68
		73	April-July	109	67
1830	Santiam, North at Mehama[d]	580	April-Sept.	968	60
		500	April-July	866	58
1875	Santiam, South at Waterloo	400	April-Sept.	652	61
		365	April-July	616	59
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	635	April-Sept.	909	70
		545	April-July	804	68
1910	Willamette at Salem[d]	3850	April-Sept.	5461	70
		3410	April-July	4942	69

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

WILLAMETTE WATERSHEDS



SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Big Bottom	2118	4/28	0	0.0	0.0	2.2**
Cascade Summit	4880	4/29	24	10.2	20.2	31.8**
Champion	4500	4/30	33	14.3	17.0	- -
Clackamas Lake	3400	c				
Clear Lake	3500	4/29	2	0.8	0.0	11.8**
Clear Lake (Experimental)	3500	4/29	8	3.1	2.9	- -
Dead Horse Grade	3800	4/30	11	2.9	8.3	- -
Detroit Town	1610	4/25	0	0.0	0.0	0.0**
Detroit Dam	1580	4/25	0	0.0	0.0	0.0**
Golden Curry Creek	3136	4/30	3	1.4	- -	- -
Hogg Pass	4755	4/26	58	22.6	41.2	53.5**
Lake Harriet	2045	4/29	0	0.0	0.0	0.0**
Layng Creek	1200	4/30	0	0.0	- -	- -
Lost Creek Ranch	1956	4/30	0	0.0	0.0	- -
Lund Park	1740	4/30	0	0.0	- -	- -
Marion Forks	2730	4/25	0	0.0	T	5.1**
Marys Peak	3620	4/28	25	10.5	1.0	- -
McCredie Springs	2120	4/29	0	0.0	0.0	0.0**
McKenzie	4800	4/30	46	19.1	47.1	- -
McKenzie Bridge	1372	4/30	0	0.0	0.0	- -
Meridian Dam	750	4/29	0	0.0	0.0	0.0**
Mill City	826	4/25	0	0.0	0.0	0.0**
Oakridge	1310	4/29	0	0.0	0.0	0.0**
Peavine Ridge	3500	4/29	9	4.2	- -	21.0**
Phlox Point	5600	4/26	83	35.9	53.3	71.4**
Railroad Overpass	2750	4/29	0	0.0	0.0	0.1**
Salt Creek Falls	4000	4/29	8	3.1	0.0	16.2**
Santiam Junction	3990	4/26	15	5.3	5.8	18.2**
Still Creek	3700	4/29	16	7.1	11.6	21.2**
Timothy Lake	3295	4/29	3	1.2	7.1	- -
Vida	800	4/30	0	0.0	0.0	- -
Waldo Lake	5500	c				
Weaver Creek	2440	4/30	0	0.0	- -	- -
White Branch Slide	2800	4/30	0	0.0	0.0	- -
Whitewater Bridge	2175	4/25	0	0.0	0.0	T**
Willamette Pass	5600	4/25	79	27.4	39.0	45.9*

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
ROGUE, UMPQUA, WATERSHEDS
OREGON

as of

MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Cool, wet April storms have brought considerable increases in runoff and high mountain snowpack in the Rogue-Umpqua area and have improved the rather dismal water supply outlook for lands served from direct streamflow. Lands served by reservoirs have also been given relief with a strong increase in storage during April.

SNOW COVER

Water content of the mountain snowpack increased from 28 percent of average on April 1 to 60 percent of average on May 1, whereas the snow normally decreases between April 1 and May 1. However, this increase was only at high elevations and will mostly affect flow of the larger streams.

SOIL MOISTURE

Abundant rains have very adequately re-charged the watershed soils.

RESERVOIR STORAGE

Stored water supplies for the Talent Irrigation District totals 108,500 acre feet compared with 86,700 a.f. last year on May 1. This is an adequate supply.

The Medford and Rogue River Valley Irrigation Districts have about 15,000 acre feet compared with 11,300 a.f. last year. Additional water can be obtained from the Talent District for some of these lands, if needed.

STREAMFLOW

Although the flow of the Rogue River at Raygold* has been 111 percent of average during April, the forecast for May through September is only 65 percent of average or 475,000 acre feet. Grants Pass Irrigation District may not find it necessary to rotate canal pumping -----the weather will tell.

Water supplies for the Eagle Point Irrigation District seem now to be improved over the outlook one month ago. However, some late season shortage may occur.

The North Umpqua below Lemolo Reservoir is forecast at 66 percent of average May through September - up slightly from the poor outlook of April 1.

The Applegate and Illinois Rivers are forecast at 61 percent of average for the full April-September period which is similar to the 1955 flow on the Applegate and the 1959 flow on the Illinois - both "short" years.

* Preliminary data from U. S. Geological Survey, Portland, Oregon and Pacific Power and Light Co., Meaford, Oregon.

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Althouse Creek	Fair	Poor
Applegate River, Big	Average	Fair
Applegate River, Little	Average	Poor
Ashland Creek	Fair	Poor
Butte Creek, Little	Fair	Poor
Butte Creek, Big	Fair	Poor
Cow Creek	Fair	Poor
Deer Creek	Fair	Poor
Elk Creek	Fair	Poor
Emigrant Cr. (above Res.)	Fair	Poor
Evans Creek	Fair	Fair
Gold Hill Irrigation Dist.	Average	Fair
Grants Pass Irrig. Dist.	Average	Fair
Grave Creek	Fair	Fair
Illinois River, East Fork	Average	Poor
Illinois River, West Fork	Average	Poor
Jump-off-Joe Creek	Fair	Fair
Neil Creek	Fair	Poor
Red Blanket Creek	Fair	Poor
Rogue River	Fair	Fair
Sucker Creek	Fair	Poor
Table Rock Irrig. Dist.	Average	Fair
Thompson Creek	Fair	Poor
Wagner Creek	Fair	Poor
Williams Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Emigrant Gap	39.0	38.6	37.5	7.7
Fish Lake	7.8	5.7	5.2	6.1
Fourmile Lake	16.1	f	6.1	10.8
Howard Prairie	60.0	53.7	36.6	- -
Hyatt Prairie	16.1	16.2	12.6	11.2

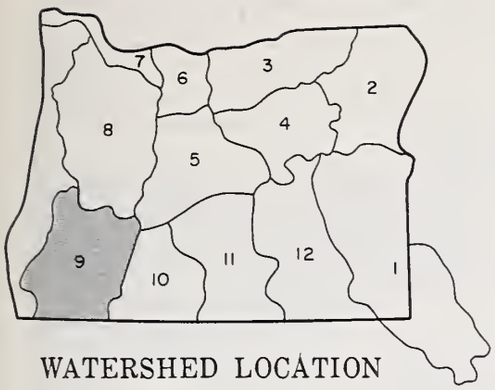
STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
3620	Applegate near Copper	80	April-Sept.	131	61
3145	Clearwater above Trap Creek[d]	50	April-Sept.	73	68
5045	Fourmile Lake net Inflow[d]	5.0	April-Sept.	7.4	68
5140	Hyatt Reservoir net Inflow[d]	***	April-Sept.	6.2	
3770	Illinois River at Kerby[d]	120	April-Sept.	196	61
		116	April-July	190	61
3425	Little Butte, N. Fk. at Fish Lake nr. Lk. Cr.[d]	***	April-Sept.	16.9	
3415	Little Butte, S. Fk. nr. Lake Creek	***	April-July	42	
	Note: Minimum flow will drop to 100 c.f.s. by ***				
3280	Rogue above Prospect	175	May-Sept.	270	65
		137	May-July	211	65
3320	Rogue, South Fork near Prospect[d]	43	May-Sept.	65	66
		36	May-July	53	67
3350	Rogue below South Fork	385	May-Sept.	584	66
		297	May-July	443	67
3590	Rogue at Raygold near Central Point	475	May-Sept.	733	65
		377	May-July	571	66
3615	Rogue at Grants Pass	447	May-Sept.	687	65
3135	Umpqua, No. blw. Lemolo Res. nr. Toketee Falls	103	May-Sept.	157	66

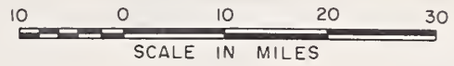
*** Snow surveys pertinent to these forecast points have not been taken and use of the forecast equations is nullified.

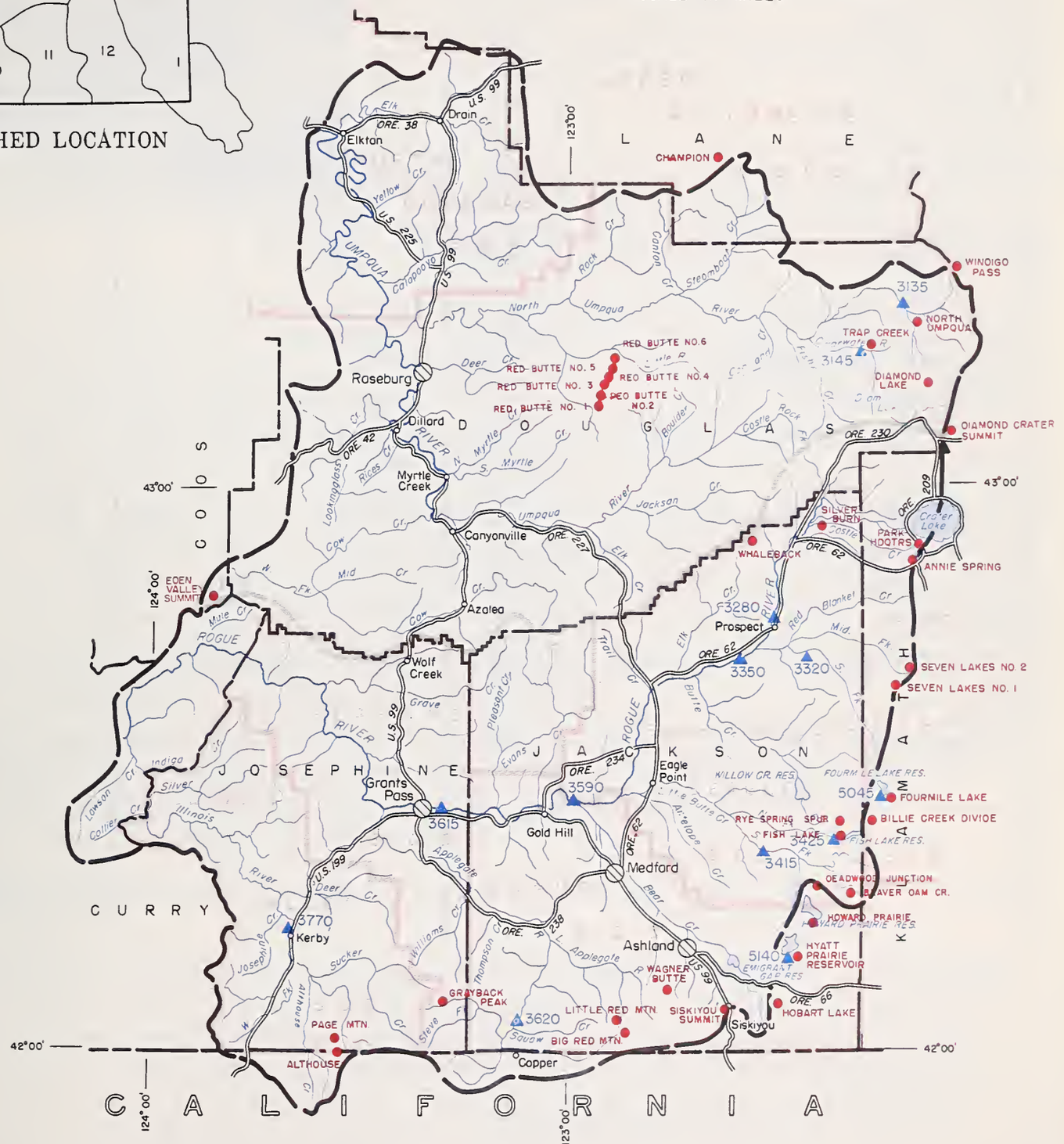
(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not Surveyed. (h) Construction. (i) 7 of 18 sampling points. (j) Partly estimated. (*) 1943-57 Adjusted average.

ROGUE, UMPQUA WATERSHEDS



WATERSHED LOCATION





LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- Forecast Point
- Snow Course

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Althouse	4530	*c*				
Annie Spring	6018	4/28	75	31.0	28.5	45.4
Beaver Dam Creek	5100	*f*				
Big Red Mountain	6500	*c*				
Billie Creek Divide	5300	4/29	9	2.8	7.8	18.4*
Champion	4500	4/30	33	14.3	17.0	- -
Cold Springs Camp	6100	*c*				
Deadwood Junction	4600	*c*				
Diamond-Crater Summit	5800	4/30	48	19.6	37.3	- -
Diamond Lake	5315	4/30	18	7.3	14.7	17.8*
Eden Valley Summit	2390	4/30	0	0.0	- -	- -
Fish Lake	4865	*f*				
Fourmile Lake	6000	*f*				
Grayback Peak	6000	*c*				
Hobart Lake	5010	*c*				
Howard Prairie	4500	*f*				
Hyatt Prairie Reservoir	4900	*c*				
Little Red Mountain	6500	*c*				
North Umpqua near Lake Creek	4215	4/29	T	T	0.9	- -
Page Mountain	4045	*c*				
Park Headquarters	6450	4/28	117	48.8	43.2	60.7*
Red Butte #1	4560	4/29	21	9.8	7.0	- -
Red Butte #2	4000	4/29	2	0.9	0.0	- -
Red Butte #3	3500	4/29	0	0.0	0.0	- -
Red Butte #4	3000	4/29	0	0.0	0.0	- -
Red Butte #5	2500	4/29	0	0.0	0.0	- -
Red Butte #6	2000	4/29	0	0.0	0.0	- -
Rye Spring Spur	5000	*f*				
Seven Lakes #1	6800	*c*				
Seven Lakes #2	6200	*c*				
Silver Burn	3720	4/27	1	0.4	0.0	- -
Siskiyou Summit	4630	*c*				
South Fork Canal	3500	4/27	0	0.0	0.0	- -
Trap Creek	3800	4/29	T	T	- -	- -
Wagner Butte	6900	*c*				
Whaleback	5140	*c*				
Windigo Pass	5800	4/25	73	27.4	42.7	52.5**

WATER SUPPLY OUTLOOK
KLAMATH WATERSHEDS
OREGON

as of

MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook for Klamath Basin has improved. Average water supplies are expected for most lands with stored water. A cool, wet April brought generous increases to the higher elevation snowpack and produced much-needed increases in streamflow to build up reservoir storage. Many streams, especially on the east side of the Basin, are still expected to yield "poor" late season water supplies unless above normal rainfall continues during the summer.

SNOW COVER - Water content of the mountain snowpack increased generously during April. Below normal temperatures allowed an added accumulation of snow when the spring melt would usually have caused a reduction during April. The snowpack is now 66 percent of the May 1 average and 90 percent of last year at this time.

SOIL MOISTURE - Water shed soils are well primed as is indicated by the measurement at Bly Mountain which is now 82 percent of total capacity.

RESERVOIR STORAGE - Reservoir storage averages 113 percent of last year at this time and 92 percent of the May 1 average. Clear Lake now holds 155,400 acre feet while last year it held 116,400 acre feet. Gerber Reservoir has 65,100 acre feet in storage and last year it held only 39,100 acre feet.

Upper Klamath Lake now has 554,900 acre feet in storage and last year on May 1 it held 531,400 a.f.

STREAMFLOW - Streamflow during April was near average and much better than expected due to better than double the average April precipitation. Forecasts of streamflow for the Basin now range from 37 percent or 6,000 acre feet inflow to Clear Lake for the May-June period to 60 percent or 260,000 acre feet for the inflow to Upper Klamath Lake for the May-September period. The Williamson is expected to flow 188,000 acre feet or 57 percent of average and the Sprague 100,000 acre feet or 52 percent for the same May-September period.

Gerber Reservoir inflow is forecasted at 44 percent of average or 3,000 acre feet for the May-June period.

The above forecasts assume normal precipitation and temperature during the remainder of the forecast period. If above normal precipitation continues on the Basin's well-primed watersheds these forecasts will be exceeded.

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Ft. Klamath Valley	Fair	Poor
Lost River (Clear Lake)	Average	Average
Lost River (Gerber)	Average	Average
Lost River (Willow Res.)	Average	Fair
Sprague River	Fair	Poor
Upper Klamath Lake	Average	Average
Williamson River	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	440.2	155.4	116.4	279.0
Gerber	94.0	65.1	39.1	65.1
Upper Klamath Lake	584.0	554.9	531.4	497.7

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
823	Clear Lake Reservoir Inflow[g]	6.0	May-June	16.3	37
8215	Gerber Reservoir Inflow[g]	3.0	May-June	6.8	44
5010	Sprague near Chiloquin	100	May-Sept.	191	52
5070	Upper Klamath Lake net Inflow[g]	260	May-Sept.	431	60
5025	Williamson below Sprague River	188	May-Sept.	330	57

SOIL MOISTURE

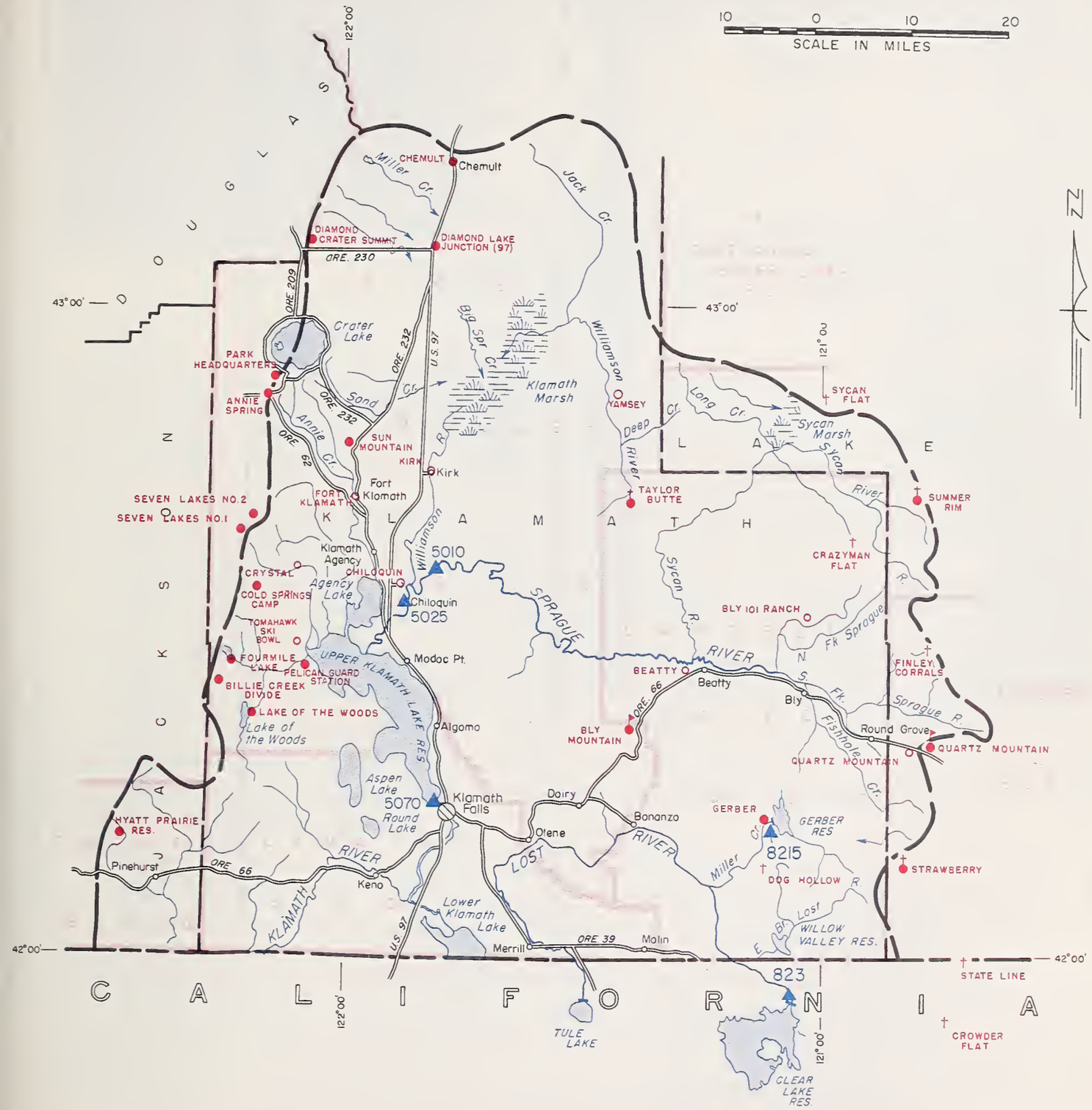
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bly Mountain	5090	42	14.0	4-26-63	11.5	11.4	11.4
Quartz Mountain	5320	48	15.3	4-26-63	7.3	6.3	6.8

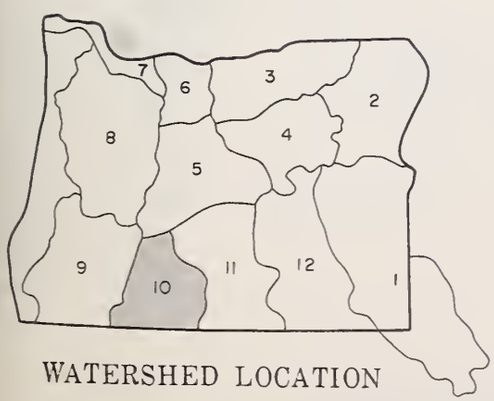
NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

Errata: Quartz Mountain soil moisture should have read 7.2 on April 1 instead of 10.9 as published.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) From PP&L or USBR records of inflow. (h) Flashboards increase capacity to 513.0 (i) Water content partly estimated. (j) Nearest current data. (k) Not surveyed. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in the base period.

KLAMATH WATERSHEDS





WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- ● Snow Course
- † Aerial Snow Depth Gage
- ○ COPCO Snow Station
- ▸ Soil Moisture Station

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Annie Springs	6018	4/28	75	31.0	28.5	45.4
Beatty (PP&L)	4300	c				
Billie Creek Divide	5300	4/29	9	2.8	7.8	18.4*
Bly Mountain	5090	4/26	0	0.0	0.0	- -
Bly 101 Ranch (PP&L)	4800	c				
Chemult	4760	4/28	0	0.0	0.0	0.5**
Chiloquin (PP&L)	4187	c				
Cold Springs Camp	6100	c				
Crazyman Flat [e]	6100	c				
Crowder Flat [e] (Calif.)	5200	c				
Crystal (PP&L)	4200	c				
Diamond-Crater Summit	5800	4/30	48	19.6	37.3	- -
Diamond Lake Junction (97)	4600	4/30	0	0.0	0.0	- -
Dog Hollow [e]	4900	c				
Finley Corrals [e]	6000	c				
Fort Klamath (PP&L)	4150	c				
Gerber	4850	4/30	0	0.0	- -	- -
Hyatt Prairie Reservoir	4900	c				
Kirk (PP&L)	4533	c				
Lake of the Woods	4960	4/26	7	2.7	5.0	6.1*
Park Headquarters	6450	4/28	117	48.8	43.2	60.7*
Pelican Guard Station	4150	4/29	0	0.0	0.0	- -
Quartz Mountain	5320	4/26	3	1.2	0.0	0.0**
Quartz Mountain (PP&L)	5504	4/26	6	1.8	0.0	- -
Seven Lakes #1	6800	c				
Seven Lakes #2	6200	c				
State Line (Calif.)	5750	c				
Strawberry	5600	4/26	8	2.1	0.0	- -
Summer Rim	7200	c				
Sun Mountain	5350	c				
Sycan Flat [e]	5500	c				
Taylor Butte	5100	c				
Tomahawk Ski Bowl (PP&L)	4200	c				
Yamsey (PP&L)	4600	c				

WATER SUPPLY OUTLOOK
LAKE COUNTY, GOOSE LAKE WATERSHEDS
OREGON

as of

MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK - The grim 1963 water supply outlook for Lake County presented one month ago has been improved by a cool, wet April. Snow has continued to accumulate at higher elevations during April where normally the spring melt would have brought a reduction in snow water content.

Streamflow was much better than expected during April and produced much-needed increases in reservoir storage.

Low elevation watersheds are still expected to produce poor late season water supplies unless above normal precipitation continues throughout the irrigation season.

SNOW COVER - Water content of the snowpack at higher elevations of the area received generous increases during April. A series of cool, wet storms deposited late snow on higher areas while delaying the usual snowmelt that occurs during April in this area.

SOIL MOISTURE - Soil moisture has continued to increase at lower elevations due to above normal precipitation while higher elevations remained about the same since much of the moisture fell as snow.

Camas Creek soil moisture station indicates 86 percent of total capacity. Quartz Mountain shows an increase in soil moisture but this station is still not showing reliable readings and therefore has not been used for comparison purposes.

RESERVOIR STORAGE - Drews Reservoir received good inflow during April and now holds 63,400 acre feet. Last year it held only 37,500 a.f. on May 1 and its average is 57,100 acre feet. Cottonwood has 8,900 acre feet while last year it held 4,400 a.f.

STREAMFLOW - Streamflow forecasts have been raised as a result of good April flows. The Chewaucan is expected to flow 38,000 acre feet or 46 percent of the April- June period. Deep Creek is forecasted at 49 percent or 35,000 acre feet for this same period. Honey and Twentymile Creeks are expected to flow 12,000 and 13,000 a.f. or 74 and 65 percent respectively.

Drews Reservoir inflow is expected to be 26,000 acre feet or 76 percent during the April-July period.

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209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Chewaucan River	Fair	Poor
Crooked Creek	Fair	Poor
Deep Creek	Fair	Poor
Dry Creek	Fair	Poor
East Side Goose Lake	Fair	Poor
Guano Lake	Fair	Poor
Honey Creek	Fair	Poor
Lakeview Water Users Assn.	Average	Average
Rock Creek (Hart Mtn.)	Fair	Poor
Silver-Buck Creeks	Fair	Poor
Summer Lake	Fair	Poor
Thomas Creek	Fair	Poor
Twentymile Creek	Fair	Poor
Warner Lakes	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottonwood	8.7	8.9	4.4	3.6
Drew	63.0	63.4	37.5	57.1

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
3840	Chewaucan near Paisley	38	April-June	82	46
3715	Deep above Adel	35	April-June	71	49
3385	Drew Reservoir net Inflow	26	April-July	34	76
3785	Honey near Plush	12.0	April-June	16.3	74
3660	Twentymile near Adel	13.0	April-June	20	65

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Camas Creek	5720	42	14.5	4-29-63	12.5	12.7	- -
Quartz Mountain	5320	48	15.3	4-26-63	7.3	6.3	6.8

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

Errata: Quartz Mountain soil moisture should have read 7.2 on April 1 instead of 10.9 as published.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period. (g) Nearest current data.

LAKE COUNTY, GOOSE LAKE WATERSHEDS

WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- COPCO Snow Station
- Soil Moisture Station

Lake County, Goose Lake Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Bald Mountain (Nev.)	6720	c				
Bear Flat Meadow [e]	5900	c				
Camas Creek	5720	c				
Cox Flat [e]	5750	c				
Crane Mountain [e]	6020	c				
Crowder Flat [e] (Calif.)	5200	c				
Dismal Swamp [e] (Calif.)	7000	c				
Finley Corrals [e]	6000	c				
Hart Mountain [e]	6350	c				
Little Bally Mountain [e] (Nev.)	6600	c				
Mill Creek	6200	c				
Patton Meadows [e]	6800	c				
Quartz Mountain (PP&L)	5504	4/26	6	1.8	0.0	- -
Quartz Mountain	5320	4/26	3	1.2	0.0	0.0**
Sherman Valley [e]	6600	c				
Silver Creek	4900	c				
State Line [e] (Calif.)	5750	c				
Strawberry	5600	4/26	8	2.1	0.0	- -
Summer Rim	7200	c				
Sycan Flat [e]	5500	c				

WATER SUPPLY OUTLOOK
HARNEY BASIN WATERSHEDS
OREGON

as of
MAY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1963 water supply outlook for Harney Basin has improved considerably due to a series of cool, wet, April storms that added much-needed water to streams of the Basin. Surprising amounts of late snow were added to higher elevations while almost 3 times the normal rain fell on hayland of the valley floor.

SNOW COVER

Water content of higher watershed snowpack made a good increase during April and now averages 163 percent of the 1943-57 period for May 1. Most of this increase is represented by the Blue Mountain Springs snow course which is just out of the northern end of the Basin and may not represent the major portion of the watershed.

SOIL MOISTURE

Watershed soils have continued to absorb moisture from the plentiful April rains and measurements indicate they average 90 percent of total capacity. Soil moisture is very adequate and will yield good runoff from future storms.

RESERVOIR STORAGE

Water supplies in stock ponds and irrigation reservoirs were supplemented by good streamflow during April and are in generally good condition throughout the Basin.

STREAMFLOW

Heavy April rains have prolonged the flows of Harney County streams and in most cases have added at least one irrigation to what had all indications of being a very short irrigation season.

Streamflow forecasts have been raised and are now as follows: Silvies River - 45,000 acre feet or 42 percent of average for the April-September period.

Silver Creek - 10,000 acre feet or 38 percent for the April-July period.

Blitzen River - 38,000 or 57 percent and Trout Creek - 4,000 or 43 percent both for the April-September period.

The above forecasts again assume average precipitation for the remainder of the season.

Report prepared by
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U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Catlow Valley	Fair	Poor
Cow Creek	Fair	Poor
Donner und Blitzen River	Fair	Poor
Mill-Coffeepot Creeks	Fair	Poor
Rattlesnake Creek	Fair	Poor
Rock Creek (Hart Mtn.)	Fair	Poor
Silver Creek	Fair	Poor
Silvies River	Fair	Poor
Soldier-Prather Creeks	Fair	Poor
Trout Creek	Fair	Poor
Whitehorse Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
3960	Donner und Blitzen near Frenchglen	38	April-Sept.	67	57
		32	April-June	55	58
4030	Silver near Riley	10	April-July	26	38
3935	Silvies near Burns	45	April-Sept.	107	42
		44	April-June	103	43
4065	Trout near Denio	4.0	April-Sept.	9.2	43
		3.6	April-July	8.5	44

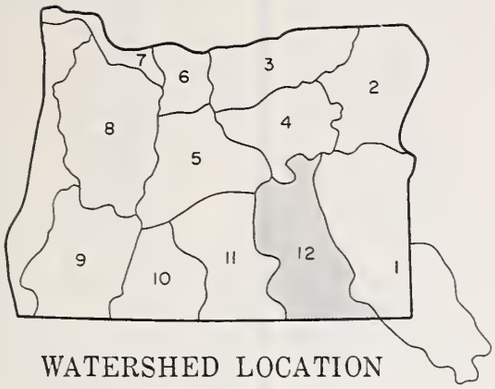
SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Springs	5900	42	16.9	4-24-63	14.2	14.3	11.1
Fish Creek	7600	48	15.0	3-26-63	12.3[j]	8.9[j]	- -
Folly Farm	4450	36	12.5	3-28-63	9.9[j]	11.6[j]	- -
Silvies	6900	48	16.4	3-26-63	13.1[j]	12.9[j]	- -
Snow Mountain	6300	48	16.7	3-25-63	14.9[j]	15.0[j]	- -
Starr Ridge	5150	36	10.6	4-26-63	10.5	10.2	9.8
Stinking Water	4800	48	21.9	3-28-63	21.5[j]	21.9[j]	- -
Willow-Bald	5000	24	6.6	3-25-63	6.2[j]	4.0[j]	- -

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Partly estimated. (i) No Fall measurement. (j) Nearest current data. (k) 2 miles south of regular course. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

HARNEY BASIN WATERSHEDS



WATERSHED LOCATION

10 0 10 20 30
SCALE IN MILES

N

119°00'

44°00'

43°00'

42°00'

C R O O K

D E S C H U T E S

G R A N T

H A R N E Y

L A K E

M A L H E U R

N E V A D A

BLUE MOUNTAIN SPRINGS
STARR RIDGE
IZEE SUMMIT
Seneca
LAKE CREEK
Izee
ROCK SPRING
SNOW MOUNTAIN
DELINTMENT LAKE
CALL MEADOW
IDLEWILD CAMP
STINKING WATER
EMIGRANT BUTTE
3935
4030
WILLOW BALD
Harney
CROW CAMP
Burns
Hines
Buchanan
US 20
US 20 & 395
US 395
ORE 78
Crane
Malheur Lake
Harney Lake
Wagontire
Princeton
ORE 205
BUCK PASTURE
Folly Farm
FOLLY FARM
BUCKSKIN LAKE
FOSTER FLAT
Frenchglen
SILVIES
3960
FISH CREEK
Roaring Spring
CATLOW VALLEY
HART MTN. REFUGE
HART MOUNTAIN
V LAKE
Fields
BLUE MTN. PASS
OREGON CANYON
4765
DENIO CREEK
Denio
TROUT CREEK
DISASTER PEAK

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- ● Snow Course
- † Aerial Snow Depth Gage
- ⚑ Soil Moisture Station

Harney Basin Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Blue Mountain Springs	5900	4/25	28	10.8	2.3	5.8**
Buck Pasture [e]	5700	[c]				
Buckskin Lake [e]	5200	[c]				
Call Meadows [e]	5340	[c]				
Crow Camp [e]	5500	[c]				
Delintment Lake	5600	[c]				
Denio Creek [e]	6000	[c]				
Disaster Peak (Nev.)	6500	[c]				
Emigrant Butte	5000	[c]				
Fish Creek	7900	[c]				
Foster Flat [e]	5020	[c]				
Hart Mountain [e]	6350	[c]				
Idlewild Camp	5200	4/30	0	0.0	0.0	- -
Izee Summit	5293	4/25	6	1.7	0.0	1.6**
Lake Creek	5120	[c]				
Oregon Canyon [e]	6950	[c]				
Rock Spring	5100	4/30	0	0.0	0.0	- -
Silvies	6900	[c]				
Snow Mountain	6300	[c]				
Starr Ridge	5150	4/26	3	1.0	0.0	0.9**
Stinking Water	4800	[f]				
Trout Creek [e]	7800	[c]				
"V" Lake [e]	6600	[c]				

"The Conservation of Water begins with the Snow Survey"

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.

OWYHEE, MALHEUR WATERSHEDS (1)

Owyhee River

	Antelope Ridge (Ida)	32	8S	1W	5900
	Battle Creek (Ida)	10	11S	1E	5700
	Bear Creek (Nev)	31	46N	55E	7800
	Big Bend (Nev)	20	45N	56E	6700
	Blue Mtn Pass (Nev)	25	45N	39E	6700
	Bonkskin, Lower (Nev)	11	45N	39E	7200
	Bonkskin, Upper (Ida)	29	12S	5W	5600
	Bull Basin (Nev)		4	47N	34E	6500
	Disaster Peak (Nev)		8	47N	34E	6500
	Fish Creek		4	39S	33E	7900
	Folly Farm Summit		4	39S	38E	4450
	Fox Creek (Nev)		33	46N	55E	6800
	Fry Canyon (Nev)		31	43N	54E	6700
	Gold Creek (Nev)		21	45N	56E	6600
	Granite Peak (Nev)		22	42N	39E	7800
	Hyde Pasture (Ida)		31	6S	2W	5800
	Jack Creek, Lower (Nev)		18	42N	53E	6800
	Jack Creek, Upper (Nev)		9	42N	55E	7250
	Jack Peak (Nev)		26	42N	53E	8420
	Jordan Valley		9	38S	45E	4390
	Lookout Butte		2	10S	47E	3650
	Louse Canyon		27	10S	44E	6410
	Martin Creek (Nev)		18	44N	40E	6700
	Midas (Nev)		18	39N	46E	7200
	Mud Flat (Ida)		34	9S	2W	5500
	Oregon Canyon		8	10S	40E	6950

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.
17H6a	Quinn Ridge (Nev)	9	47N	41E	6300
16G11a	Red Canyon (Ida)	32	11S	4W	6500
15H6M	Rodeo Flat (Nev)	36	43N	53E	6800
15H3A	76 Creek (Nev)	6	44N	58E	7100
16F3	Silver City (Ida)	6	5S	3W	6400
18G1MA	Silvies	35	32S	32½E	6900
16G1	South Mountain No.2 (Ida)	35	7S	5W	6340
16F6a	Succor Creek (Ida)	25	3S	5W	6100
15H9M	Taylor Canyon (Nev)	35	39N	53E	6200
15H5	Trenevan Ranch (Nev)	9	39N	55E	5700
16G2MA	Triangle (Ida)	25	7S	3W	5150
18G5a	Trout Creek	10	41S	38E	7800
18G7a	"V" Lake	31	35½S	32½E	6600

Malheur River

18E1Z	Barney Creek	16	12S	36E	5950
18E16M	Blue Mountain Spring	21	15S	35E	5900
18F6a	Buck Pasture	21	29S	35E	5700
18E21a	Bully Creek	10	17S	37E	5300
18F7a	Call Meadows	29	20S	33E	5340
17F2a	Cottonwood-Indian	10	19S	39E	4320
18E19M	Crane Prairie	24	16S	34E	5375
18F8a	Crow Camp		Unsurveyed		
18E20	Eldorado Pass	20	14S	38E	4600
18E26a	Flag Prairie	32	16S	36E	4750
18E18	Lake Creek	10	16S	33½E	5120
18E22a	Logan Valley	13	16S	33½E	5100
18F1	Rock Spring	23	18S	32E	5100
18F4M	Stinking Water	33	21S	34E	4800

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS (2)

Burnt River

18E14	Barney Creek	16	14S	36E	5950
18E13M	Blue Mountain Summit	6	12S	36E	5098
17E1M	Dooley Mountain	32	11S	40E	5430
18E20	Eldorado Pass	20	14S	38E	4600
18E8	Gold Center	21	9S	36E	5340
18E9	Tipton	34	10S	35½E	5100

Powder River

18E1	Anthony Lake	18	7S	37E	7125
18E5	Bourne	33	8S	37E	5800
17E1M	Dooley Mountain	32	11S	40E	5430
18E3	Eilertson Meadows	18	8S	38E	5400
18E8	Gold Center	21	9S	36E	5340
18E6	Goodrich Lake	4	9S	38E	6775
17D12m	Ladd Summit	5	5S	39E	3730
18E23	Little Alps	10	7S	37E	6200
18D10	Summit Springs	9	6S	37E	6000
17D7	Taylor Green	3	6S	42E	5740

Pine Creek

17D8	Schneider Meadows	35	6S	45E	5400

Grande Ronde River

17D1	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7000
18E1	Anthony Lake	18	7S	37E	7125
17D10a	Bald Mountain	14 & 15	4S	41E	6700
18D9	Beaver Reservoir	8	5S	37E	5340
18D8	County Line	28	4S	34E	4800
18D6	Lucky Strike	28	3S	32E	5050
18D5	Meacham	24 & 25	1S	35E	4300
17D13a	Mirror Lake	34	4S	44E	8200
17D6M	Moss Spring	28	3S	41E	5850
18D7	Schoolmarm	28	4S	34E	4775
17D11a	Standley	28	2S	42E	7400
17D7	Taylor Green	3	6S	42E	5740
18D3M	Tollgate	32	4N	38E	5070
17D15	TV Ridge	11	2S	43E	5670

Imnaha River

17D1	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7000
17D14	Big Sheep	33	4S	46E	6200

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS (3)

Umatilla River

19D2	Arbuckle Mountain	33	4S	29E	5400
18D14m	Athena-Weston Summit	21	4N	35E	1700
18D12M	Battle Mountain Summit	29	3S	31E	4340
18D4M	Emigrant Springs	29	1N	35E	3925
18D6	Lucky Strike	28	3S	32E	5050
18D5	Meacham	24 & 25	1S	35E	4300
18D3M	Tollgate	32	4N	38E	5070
18D13	Walla Walla Diversion	22	6N	38E	2400

Walla Walla River

18D3M	Tollgate	32	4N	38E	5070

Willow Creek

19D2	Arbuckle Mountain	33	4S	29E	5400

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.

UPPER JOHN DAY WATERSHEDS (4)

Upper John Day River

18E1	Anthony Lake	18	7S	37E	7125
19D2	Arbuckle Mountain	33	4S	29E	5400
18D12M	Battle Mountain Summit	29	3S	31E	4340
19E2M	Beech Creek Summit	4	12S	30E	4800
18E16M	Blue Mountain Spring	21	15S	35E	5900
18E13M	Blue Mountain Summit	6	12S	36E	5098
19E3M	Derr	14	13S	23E	5670
18E27a	East Fork Canyon	15	15S	32E	5700
18E8	Gold Center	21	9S	36E	5340
18E24a	Indian Cr. Butte	5	15S	33E	6550
19E9	Jess Summit	28	16S	29E	5293
18D6	Lucky Strike	28	3S	32E	5050
20E1M	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
18E7	Olive Lake	14	9S	33½E	6000
18D7	Schoolmarm	28	4S	34E	4775
19F1M	Snow Mountain	1	19S	26E	6300
19E7M	Starr Ridge	20	15S	31E	5150
18E9	Tipton	34	10S	35½E	5100
18E25M	Williams Ranch	20	15S	32E	4500

UPPER DESCHUTES, CROOKED WATERSHEDS (5)

Upper Deschutes River

21E11	Black Pine Spring	14	16S	9E	4600
21F8	Caldwell Ranch	30	21S	8E	4400
22F3	Cascade Summit	7	23S	6E	4880
21F7	Charlton Lake	23	21S	6E	5750
21F11	Chemult	21	27S	8E	4760
21F14	Fire Road	36	21S	11E	5050
21E6	Hogg Pass	24	13S	7½E	4755
21F4	Hungry Flat	30	18S	11E	4400
21F6	Irish-Taylor	25	20S	6E	5500
21F17	Mowich	29	25S	25E	4700
21F10	New Crescent Lake	11	24S	6E	4800
21F19	New Dutchman Flat #2	21	18S	9E	6400
21F13	Paulina Lake	34	21S	12E	6330
21F15	Paulina Prairie	28	21S	11E	4285
21F3	Tangent	28	18S	10E	5400
21E15	Three Creeks Butte	27	16S	9E	5200
21E13	Three Creek Meadows	3	17S	9E	5600
22F2	Waldo Lake	15	21S	6E	5500
22F14	Willamette Pass	33	21S	5½E	5600
22F15	Windigo Pass	20	23S	6E	5800

Crooked River

19E3M	Derr	14	13S	23E	5670
20E1M	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
19F1M	Snow Mountain	1	19S	26E	6300
19E4	Tamarack	8	15S	25E	4800

HOOD, MILE CREEKS LOWER DESCHUTES WATERSHEDS (6)

Hood River

21D5	Brooks Meadows	2	2S	10E	4300
21D25M	Cooper Spur	6	2S	10E	3490
21D1	Greenpoint Reservoir	28	2N	9E	3400
21D20	Knebal Springs	31	1S	11E	3850
21D23	Parkdale	6	1S	10E	1770
21D8	Phlox Point	6	3S	9E	5600
21D4	Red Hill	21	1S	9E	4400
21D9	Still Creek	25	3S	8½E	3700
21D7	Tilly Jane	15	2S	9E	6000
21D21	Ulrich Ranch Junction	28	1S	11E	3350
21D24	Upper Valley	20	1S	10E	2530

Mile Creeks - Mosier Creek

21D6	Brooks Meadows	2	2S	10E	4300
21D20	Knebal Springs	31	1S	11E	3850
21D21	Ulrich Ranch Junction	28	1S	11E	3350

Lower Deschutes River

21D12	Clear Lake	29	4S	9E	3500
21E6	Hogg Pass	24	13S	7½E	4755

LOWER COLUMBIA WATERSHEDS (7)

Sandy River

21D8	Phlox Point	6	3S	9E	5600
21D9	Still Creek	25	3S	8½E	3700

WILLAMETTE WATERSHEDS (8)

Clackamas River

21D15	Big Bottom	25	6S	7E	2118
21D13	Clackamas Lake	35	5S	8½E	3400
21D12	Clear Lake	29	4S	9E	3500
21D16	Lake Harriet	4	6S	7E	2045
21D14	Peavine Ridge	14 & 15	6S	7E	3500
21D8	Phlox Point	6	3S	9E	5600
21D9	Still Creek	25	3S	8½E	3700
21D17	Timothy Lake	26	5S	8E	3295

Santiam River

22E1	Detroit (town)	1	10S	5E	1610
22E2	Detroit Dam	7	10S	5E	1580
21E6	Hogg Pass	24	13S	7½E	4755
21E4	Marion Forks	28	11S	7E	2730
22E3	Mill City	29	9S	3E	826
21E5	Santiam Junction	14	13S	7E	3990
21E3	Whitewater Bridge	28	10S	7E	2175

McKenzie River

21E8	Dead Horse Grade	13	16S	7E	3800
22E4	Lost Creek Ranch	24	16S	6E	1956
21E7	McKenzie	35	15S	7½E	4800
22E5	McKenzie Bridge	13	16S	5E	1372
22E6	Vida	28	16S	2E	800
21E9	White Branch Slide	15	16S	7E	2800

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.

Middle Fork Willamette River

22F3	Cascade Summit	7	23S	6E	4880
22F6	McCredie Springs	26	21S	4E	2120
22F8	Meridian Dam	13	19S	1W	750
22F7	Oakridge	16	21S	3E	1310
22F5	Railroad Overpass	27	22S	5E	2750
22F4	Salt Creek Falls	33	22S	6E	4000
22F2	Waldo Lake	15	21S	6E	5500
22F14	Willamette Pass	33	21S	5½E	5600

Coast Fork Willamette River

22F9	Champion	12	23S	1E	4500
22F10	Golden Curry Creek	1	23S	1E	3136
22F13	Layng Creek R. S.	31	21S	1E	1200
22F12	Lund Park	22	22S	1E	1740
22F11	Weaver Creek	35	22S	1E	2440

Mary's River

23E1	Mary's Peak	21	12S	7W	3620

ROGUE, UMPQUA WATERSHEDS (9)

Rogue River

23G4	Althouse	17	41S	7W	4530
22C6	Annie Spring	19	31S	6E	6018
22G28	Beaver Dam Creek	1	38S	4E	5100
22G21	Big Red Mountain	31	40S	1W	6500
22G13	Billie Creek Divide	30	36S	5E	5300
22G27	Deadwood Junction	8	38S	4E	4600
22F19	Diamond-Crater Summit	34	28S	6E	5800
22G14	Fish Lake	3	37S	4E	4865
22G12	Fourmile Lake	9	36S	5E	6000
23G3	Grayback Peak	9	40S	5W	6000
22G17	Hobart Lake	17	40S	3E	5010
22G26	Howard Prairie	32	38S	4E	4500
22G16	Hyatt Prairie Reservoir	15	39S	3E	4900
22G22	Little Red Mountain	25	40S	2W	6500
23G5	Page Mountain	8	41S	7W	4045
22G5	Park Headquarters	8	31S	6E	6450
22G29	Rye Spring Spur	33	36S	4E	5000
22G10	Seven Lakes No. 1	3	34S	5E	6800
22G11	Seven Lakes No. 2	26	33S	5E	6200
22G2	Silver Burn	30	30S	4E	3720
22G20	Siskiyou Summit	17	40S	2E	4630
22G9	South Fork Canal	12	33S	3E	3500
22G18	Wagner Butte	1	40S	1W	6900
22G1	Whaleback	3	31S	2E	5140

Umpqua River

22F9	Champion	12	23S	1E	4500
22F18	Diamond Lake	29	27S	6E	5315
23G7	Eden Valley Summit	10	32S	10W	2390
22F16	North Umpqua	19	26S	6E	4215
22F23	Red Butte No. 1	36	27S	2W	4560
22F24	Red Butte No. 2	30	27S	1W	4000
22F25	Red Butte No. 3	30	27S	1W	3500
22F26	Red Butte No. 4	36	27S	1W	3000
22F27	Red Butte No. 5	20	27S	1W	2500
22F28	Red Butte No. 6	17	27S	1W	2000
22F17	Trap Creek	1	27S	4E	3400
22G1	Whaleback	3	31S	2E	5140
22F15	Windigo Pass	20	25S	6E	5800

KLAMATH WATERSHEDS (10)

Klamath River

22G6	Annie Spring	19	31S	6E	6018
22G13	Billie Creek Divide	30	36S	5E	5300
21G5	Bly Mountain	15 & 22	37S	11E	5090
21F11	Chemult	21	27S	8E	4760
22G24	Gold Springs Camp	12	35S	5E	6100
20G12a	Crazyman Flat	9	34S	15E	6100
20H2a	Crowder Flat (Cal)	30	47N	11E	5200
22F19	Diamond-Crater Summit	34	28S	6E	5800
21F18	Diamond Lake Jct. (97)	1	29S	7E	4600
21G6a	Dog Hollow	1	40S	14E	4900
20G14a	Finley Corrals	11	36S	16E	6000
22G12	Fourmile Lake	9	36S	5E	6000
21G4	Gerber	12	39S	13E	4850
22G16	Hyatt Prairie Reservoir	15	39S	3E	4900
22G26	Howard Prairie	32	38S	4E	4500
22G15	Lake of the Woods	11	37S	5E	4960
22G5	Park Headquarters	8	31S	6E	6450
22G25	Pelican Guard Station	9	36S	6E	4150
20G6M	Quartz Mountain	2	38S	16E	5320
22G10	Seven Lakes No. 1	3	34S	5E	6800
22G11	Seven Lakes No. 2	26	33S	5E	6200
20H1a	State Line (Cal)	21	48N	11E	5750
20G9A	Strawberry	4	40S	16E	5600
20G2A	Summer Rim	15	33S	16E	7200
21G2	Sun Mountain	22	32S	7½E	5350
20G13a	Sycan Flat	25	31S	14E	5500
21G3	Taylor Butte	16	33S	11E	5100

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.

Pacific Power and Light Company's Snow Stations

1	Beatty (PP&L)	22	36S	12E	4300
10	Bly 101 Ranch (PP&L)	22	35S	14E	4800
3	Chiloquin (PP&L)	34	34S	7E	4187
4	Crystal (PP&L)	26	34S	6E	4200
5	Fort Klamath (PP&L)	22	33S	7½E	4150
6	Kirk (PP&L)	1	33S	7E	4533
9	Quartz Mountain (PP&L)	33	37S	16E	5504
8	Tomahawk Ski Bowl (PP&L)	3	36S	6E	4200
12	Yamsey (PP&L)	20	31S	11E	4600

LAKE COUNTY, GOOSE LAKE WATERSHEDS (11)

Goose Lake

20G15a	Bear Flat Meadow	27	36S	19E	5900
20G8M	Camas Creek	5	39S	21E	5720
20G11a	Cox Flat	16	37S	18E	5750
20G16a	Crane Mountain	13	40S	21E	6020
20H2a	Crowder Flat (Cal)	30	47N	11E	5200
20H3a	Dismal Swamp (Cal)	31	48N	16E	7000
20G17a	Patton Meadow	28	38S	18E	6800
20G6M	Quartz Mountain	2	38S	16E	5320
20H1a	State Line (Cal)	21	48N	11E	5750
20G9a	Strawberry	4	40S	16E	5600

Abert Lake

20G15a	Bear Flat Meadow	27	36S	19E	5900
20G11a	Cox Flat	16	37S	18E	5750
20G14a	Finley Corrals	11	36S	16E	6000
20G4	Mill Creek	1	34S	17E	6200
20G6M	Quartz Mountain	2	38S	16E	5320
20G10a	Sherman Valley	15	37S	21E	6600

Summer Lake

20G2A	Summer Rim	15	33S	16E	7200

Silver Lake

21F12	Silver Creek	25 & 26	29S	13E	4900
20G13a	Sycan Flat	25	31S	14E	5500

Warner Lake

20G8M	Camas Creek	5	39S	21E	5720
20G16a	Crane Mountain	13	40S	21E	6020
20H3a	Dismal Swamp (Cal)	31	48N	22E	7000
19G1a	Hart Mountain	1	36S	25E	6350
20G10a	Sherman Valley	15	37S	21E	6600

Guano Lake

19H1	Bald Mountain (Nev)	17	45N	21E	6720
19G1a	Hart Mountain	1	36S	25E	6350
19H4a	Little Bally Mt. (Nev)	8	45N	19E	6600

HARNEY BASIN WATERSHED (12)

Silvies River - Silver Creek

18F7a	Call Meadows	29	20S	33E	5340
19F2	Delintment Lake	28	19S	26E	5600
19F3	Emigrant Butte	14	21S	27E	5000
18F3	Idlewild Camp	27	20S	31E	5200
19E9	Izee Summit	28	16S	29E	5293
18F1	Rock Spring	23	18S	32E	5100
19F1M	Snow Mountain	1	19S	26E	6300
19E7M	Starr Ridge	20	15S	31E	5150
18F4M	Stinking Water	33	21S	34E	4800
19F4m	Willow-Bald	19	22S	29E	5000

Donner Und Blitzen River

18F6a	Buck Pasture	21	29S	35E	5700
18G2MA	Fish Creek	4	33S	33E	7900
19G1a	Hart Mountain	1	36S	25E	6350
18G1MA	Silvies	35	32S	32½E	6900
18G7a	"V" Lake	31	35½S	32½E	6600

Trout and Whitehorse Creeks

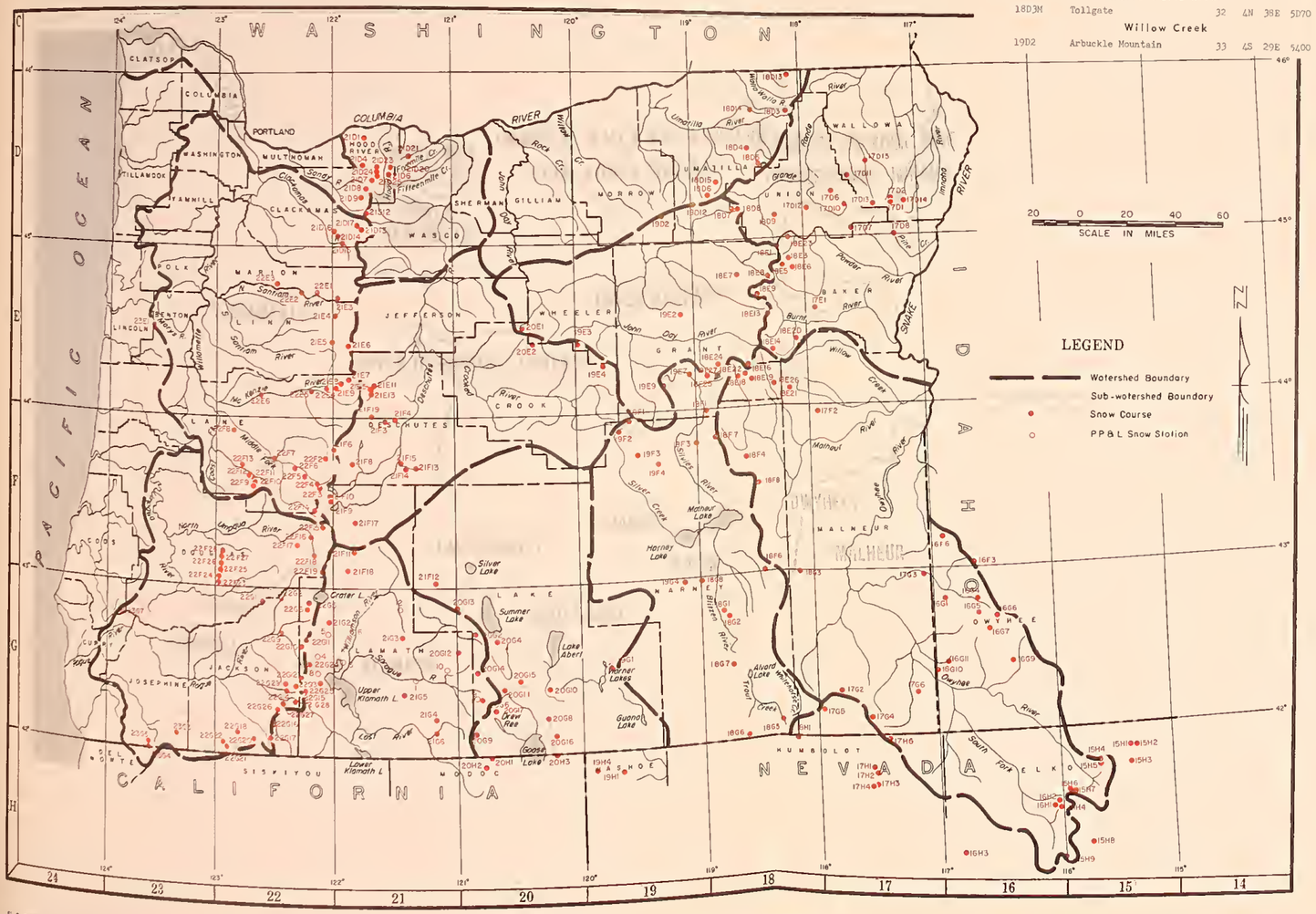
18G6a	Denio Creek	14	41S	34E	6000
18H1	Disaster Peak (Nev)	8	47N	34E	6500
17G5a	Oregon Canyon	9	40S	40E	6950
18G5a	Trout Creek	10	41S	38E	7800

Horney Lake

18C8	Buckskin Lake	2	30S	30E	5200
19G4	Foster Flat	15	30S	29E	5020

LEGEND

1902	SNOW COURSE ONLY
1902M	SNOW COURSE AND SOIL MOISTURE
1902MA	SNOW COURSE, SOIL MOISTURE AND AERIAL MARKER
1902A	SNOW COURSE AND AERIAL MARKER
1902m	SOIL MOISTURE ONLY
1902a	AERIAL MARKER ONLY



U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE USDA-SCS PORTLAND, OREG. 1962 M-1874

Map and Index to OREGON SNOW COURSES

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE
- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon State University
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil Conservation Districts of Oregon

COUNTY
- Douglas County Water Resources Survey

FEDERAL
- Department of Agriculture
  - Cooperative Extension Service
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of the Interior
  - Bonneville Power Administration
  - Bureau of Land Management
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - National Park Service
- Department of National Defense
  - Corps of Army Engineers

PUBLIC UTILITIES
- Pacific Power and Light Company
- Portland General Electric Company
- California-Pacific Utilities Company

MUNICIPALITIES
- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS
- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale-Oregon Irrigation District
- Warmsprings Irrigation District

PRIVATE ORGANIZATIONS
- Amalgamated Sugar Company
- The Crag Rats, Hood River, Oregon

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
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COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"The Conservation of Water begins with the Snow Survey"